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The Edward Stirling Lectures.[1]

LECTURE II.

ADVANCES IN GYNÆCOLOGY OVER THIRTY YEARS.

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THIRTY years ago the commonest condition encountered in gynæcology was pelvic inflammation. Every structure in the genital tract from the vulva to the Fallopian tubes was the target of inflammatory processes. It may be difficult for the recent student or graduate to picture the field of inflammation before the introduction of the antibiotic drugs. The whole history of medicine and surgery had been built round the story of inflammation, with its classical signs of heat, redness, swelling, pain and loss of function. This applied equally to mucous membranes, to connective tissues and to organs. It was a crippling and disabling condition which, in many cases, brought prolonged illness, a slow and painful convalescence and frequently death. The gonococci, the streptococci and the staphylococci were the organisms mainly concerned, with occasionally the *Bacillus coli communis* or—in fulminating cases—the organism of gas gangrene, the *Bacillus welchii*. In the lower part of the pelvic tract, vulvitis, urethritis and vaginitis were crippling and intensely painful diseases which ran a course of several weeks. When the inflammation spread to the uterus, there was an enlarged tender organ with discharge, backache and hæmorrhage. When the inflammation spread to the Fallopian tubes and peritoneum there was pelvic peritonitis, while if the organisms attacked the connective tissue of the broad ligaments, pelvic cellulitis or parametritis laid the patient in bed for anything up to three months. Pelvic abscesses and septicæmia were not uncommon complications; "pus tubes" were very common. Rarely did an operating afternoon pass but that one operated on two or three patients with double "pus tubes". Sterility was a common condition in those patients who recovered. When in the early thirties of this century the sulphonamides in the form of "Prontosil" came to our aid, the picture changed dramatically within a few months. The patient with septicæmia who was doomed to die, recovered. Pelvic cellulitis and pelvic peritonitis settled down in a few days. When in the 1940's penicillin and its co-antibiotics aureomycin, streptomycin and "Chloromycetin" were introduced, the field of attack was widened, until today to see a patient with severe pelvic inflammation is very uncommon in our practices. Gonorrhœa has lost its fearsome aspect. Within forty-eight hours of the commencement of treatment the discharge practically disappears; all pain is gone and the patient, although not free from infection, is free from discomfort. "Pus tubes" are now rarities. Pelvic cellulitis, though frequently associated with a laceration of the cervix and a septic

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abortion or a rough curettage in the presence of inflammation in the uterus, is comparatively rare. Not often do we see the "plaster of Paris" type of inflammation setting all the organs in the pelvis in one solid mass and taking months to resolve. The older members of my audience will remember how we used these drugs at first in tiny doses, with all sorts of precautions against toxic effects, and in fear and trembling of tremendous physical and chemical reactions in our patients. As the biochemist has purified the products and removed the toxic elements, so have our doses increased, until today we give what twenty years ago would have been regarded as enormous doses. There is speculation among some of our profession whether the pendulum has swung a little too far, and whether these powerful antibiotics are used too frequently; but I think this is wrong. In the United States of America, where these drugs are plentiful and cheap, I am informed that hospitals are closing down large wards, and indeed hospitals are diminishing in size owing to the fact that a great many of the surgical diseases due to the organisms causing inflammation have practically disappeared. At the first sign of inflammation the doctor uses these drugs freely and in large doses, and the infection is killed at the onset. This, to my mind, is true preventive medicine. Any condition of socialized medicine which interferes with the free use of these drugs or makes them prohibitive or places difficulties in the way of doctors obtaining them and using them is a very serious retrograde step in medicine, and is to be opposed by the medical profession with all the weight of its authority.

However, I would sound one note of warning. The fact that these drugs are so easily available to those who can pay for them, and so potent in their effects, should not let us disregard the primary duties of disinfection and asepsis, or cause us to neglect the fundamental surgical principles of repair of lacerations and restoration of parts to their normal condition. The proper combination of these methods, together with the use of antibiotics, will in the next generation or so practically extirpate inflammatory conditions from the field of medicine and surgery. This applies with equal force to many of the acute infectious diseases, as well as to inflammatory surgical conditions of the pelvic tract. I would urge on the younger men who are coming forward to take our place that they should be brave and bold in the use of these wonderful accessories to treatment.

Prolapse.

A prolapse may mean any downward displacement of the pelvic viscera. Usually the term is confined to the uterus, but it can be used with equal force for the bladder or urethra or rectum. The incidence of prolapse has not decreased over the last thirty years—indeed, probably it has increased—and one sees more affected patients today than one did thirty years ago. The same causes are present—namely, muscular weakness, stress strain on the supports of the uterus, forceps delivery before the cervix is fully dilated, and lacerations of the pelvic floor.

One cannot shut one's eye to the fact that as far as women are concerned, the household position has become much more difficult. Over the past thirty years, as a result of two major wars and a depression, much more hard physical work has come the way of the housewife. No longer does the grocer, the butcher, the baker or the ironmonger deliver his goods at the door. Shopping is a daily chore, which involves lifting and carrying heavy weights for long distances. Domestic help in the home is almost unobtainable. As a result the average housewife works far harder physically than she had to do thirty years ago. This is having its effect on the weakened pelvic floor that many housewives have. Added to this is the problem of early ambulation, both in obstetrics and in surgery. The present fad for getting women out of bed on the second or third day after a confinement or after a major abdominal operation, and having them walking about or even returning to their housework far too early will have its inevitable effects in a tremendous increase in prolapse. The next generation will pay for what is being done today.

The treatment of prolapse has improved. Some type or modification of the original Fothergill operation or, as it is frequently called, "the Manchester type of operation" developed by Fothergill, Donald and Fletcher-Shaw, has become practically standard treatment. Rarely is it necessary, apart from gross pathological conditions in the pelvis, to open the abdomen. The repair can be carried out completely and successfully from below. A great deal of work has been done on the anatomy of the supports of the uterus. This, too, has helped in improving the present treatment of prolapse.

Endocrinology.

Twenty-five years ago our knowledge of the glands of internal secretion was fragmentary and, in some cases, rudimentary. My colleagues will recall the "shot-gun" therapy of the early twenties. "Mixed glands number 1" for males and "mixed glands number 2" for females consisted of bits of thyroid gland, pituitary gland, brain, thymus, suprarenal gland, with ovary for the female or testis for the male, compounded together in one tablet. Of these the only one that was of practical value was the thyroid gland. In the last three decades our knowledge of the glands of internal secretion has been widely extended and advanced. The story of the internal secretions of the ovary and those which control the uterus is a fascinating one. The pituitary gland has taken its place as the leader of the endocrine orchestra. The thyroid and the suprarenal glands have taken their place in the endocrine necklace. The gonadotropic hormones have been recognized. Chemical extracts of these glands are now standard preparations in crystalline form. The dosage can be measured with great accuracy, and biological controls give accurate standardization. The endocrines have taken their place as potent drugs. A woman whose ovaries have been completely removed can be made to menstruate "normally" by sufficient doses of œstrone and progesterone given cyclically. The problem that confronts the gynæcologist today is, what good can we do with these potent drugs? Nowhere in medicine is sound common sense together with a knowledge of physiology required more than in the application of the endocrines in gynæcology. With these powerful therapeutic aids we can assist in the treatment of amenorrhœa, menorrhagia and dysmenorrhœa. But the drugs are strong and powerful. If they are used to excess, if they are given for too long a period, or if their use is uncontrolled by the doctor who prescribes them, more harm can be done than good. This applies particularly to the androgens or male hormones.

The latest to appear on the scene are the steroid compounds from the cortex of the suprarenal gland. They are a group of very powerrful and potent chemical compounds. We are only now slowly exploring the possibilities and realizing the powers which have been placed in our hands from a gland which, up till a few years ago, was completely ignored except for the adrenaline produced from the medulla of the gland. It would appear that the suprarenal cortex holds the key to many very urgent medical and surgical problems of the future, and will richly repay close study.

Thirty years ago myxœdema and cretinism were yielding to treatment by thyroid gland extracts. Since then many other medical and surgical conditions have come under control or have been more clearly understood. Cushing's syndrome is beginning to be fully understood. Simmonds's disease has been differentiated from *anorexia nervosa*. Rheumatoid arthritis has come under medical control. Even patients with advanced malignant disease have received a considerable amount of comfort and benefit from endocrine therapy, combined with other methods of treatment. In this department of medicine the door is opening steadily more and more widely, and the vista which spreads before our eyes becomes more alluring every day.

The use of radioactive tracer substances is widening the scope of our knowledge of the application of the endocrines. The biochemist and the physicist are our allies in the attack on disease through the endocrine glands. Let us collaborate with them and cooperate with them in every

way, for it will be by a combination of clinical observation and scientific investigation both in the ward and in the laboratory that the great discoveries of the future will be made. But it is the clinician working constantly and in close touch with the patient who has the greatest chance to lead the way. Close observation and accurate recording of results will do as much for you as they did for Mackenzie or Lister. The observant and thoughtful general practitioner is still in the front line of the battle.

Cancer.

Sometimes we are inclined to think that the community is becoming much more "cancer-minded", but we sometimes receive very rude shocks when we see patients with an advanced inoperable cancer reporting to the doctor for the first time after it has been present for many months or years. There is still a great deal of ignorance in the mind of the general public in regard to cancer. The departments of public health are doing good work, but much more remains to be done in educating the public. This is of the greatest importance, because early diagnosis is still our greatest safeguard in the treatment of cancer. Cytological diagnosis is a modern development. Papanicolaou and his co-workers and those who have followed in his steps have helped to advance the early diagnosis of cancer; but it still requires a pathologist highly skilled in microscopic diagnosis to give an accurate opinion on the cells shown in the slides. I sincerely hope our younger men will devote a great deal of attention to this problem. Clinics for the diagnosis of cancer are now being established in many great cities and should be of value to help combat this killer. Thirty years ago operation was the only method of treatment. Radium and deep X rays were being recognized as useful adjuncts. Then the tide turned, and throughout the world the great majority of clinics swung over to the use of radium and deep X rays to the exclusion of surgery. Recently the pendulum has swung back, and the extended panhysterectomy of the Wertheim type is coming back into favour. Thirty years ago there was a 40% post-operative mortality rate from this great operation, due mainly to sepsis. In the last thirty years, with the introduction of diathermy and radium to clear up pre-operative sepsis together with blood transfusions to combat shock and with antibiotics to combat infection, the post-operative mortality rate is extremely low. But it is a big and trying operation, which should be performed only by those well skilled in pelvic surgery. There is no doubt that in many cases of the first or second stage of cancer of the cervix most excellent results can be obtained by skilled operators. With the use of radium pre-operatively and deep X rays post-operatively the scope of the operation has been extended and the results have been improved still further; but it is still too early to be dogmatic as to whether surgery on the one hand or radium and deep X ray therapy on the other is the best line of treatment. My own view is that a judicious combination of the three—radium pre-operatively, an extensive removal of the parts together with glands draining them, and post-operative irradiation of the whole area—gives the patient the best possible chance of recovery.

A new door is opening with the use of ACTH and antibiotics in the treatment of cancer. Relief from pain, comfort and prolongation of life can be given in most cases, even though the disease is very advanced. A great deal of work has yet to be done in this field. Cure is not achieved at this stage of investigation.

Our knowledge of deep X rays has advanced far from the primitive machines of thirty years ago, when even protection for the operator himself was not properly understood. From comparatively small machines we have advanced to giant machines using hundreds of thousands and even millions of volts. The latest machines go up to ten million volts. It will be of great value to see what results are obtained in skilled hands in this direction.

Radium has been of considerable assistance in the treatment of some non-malignant gynæcological conditions. In some cases of *metropathia hæmorrhagica* small doses are of considerable use, as they are also in hæmorrhage from *fibrosis uteri*. Radium can also be used to control small fibroid tumours and to induce the menopause in women towards the age of fifty years who are hæmorrhaging unduly. It should never be used for this purpose without a diagnostic curettage, as cancer of the body of the uterus or even of the cervix may be overlooked unless a thorough curettage is carried out before radium is inserted. This is a cardinal rule in gynæcological practice.

Hysterectomy.

When it is necessary to remove the uterus, should this be done by the total or by the subtotal method? This has been a great controversy over the last thirty years in gynæcological surgery. One has seen so many disasters from subtotal hysterectomy that one would, at first sight, say that total hysterectomy should be performed in every case; but there is no doubt that subtotal hysterectomy is easier, quicker and safer in the hands of one who is not constantly performing pelvic surgery. It must be emphasized that a total hysterectomy is an extensive major operation requiring thorough knowledge of the anatomy of the pelvis and skilled operative technique. In the hands of a competent surgeon total hysterectomy is the operation of choice. Only if the cervix is thoroughly healthy and preferably nulliparous, and when it is carefully inspected and examined under the anæsthetic before the operation, is a subtotal hysterectomy justified.

Fibroid Tumours.

The greatest advance in the treatment of fibroid tumours was made by Victor Bonney, who introduced and extended the operation of myomectomy. Many uteri, which years ago would have been removed, are now saved by this operation. The uterus is left as a normal, healthy, functioning organ, menstruation is maintained and in many cases one or several children have been born to patients who have had this operation. This is truly conservative gynæcology. Without doubt it has saved a great many women from sterility and from the psychical effects so often associated with a hysterectomy in young women. I hope that, until that time when fibroids can be controlled by endocrine or chemical means, the use of this operation will be widely extended.

The Surgery of the Ovary.

A most important advance in the surgery of the ovary has again been the work of Victor Bonney, who has amplified and extended the use of ovarian cystectomy. Here again many ovaries which years ago would have been removed are now saved by careful plastic surgery. I cannot too strongly commend to my younger colleagues the careful study of Victor Bonney's "The Technical Minutiæ of Extended Myomectomy and Ovarian Cystectomy". It is a great and monumental contribution to conservative and gynæcological surgery, and should be in the hands of every young surgeon and gynæcologist.

Endometriosis.

It was only in 1896 that Cullen first described a condition which we recognize as adenomyosis of the uterus. It was not until Sampson and Bailey independently in the twenties published their work on what was described as "blood cysts" or "chocolate cysts" of the ovary that the two conditions in the uterus and the ovary were brought into line and identified as arising from displaced endometrium. Remember that thirty years ago the commonest condition that the surgeon encountered in the pelvis was chronic inflammatory disease—"pus tubes" or chronic salpingitis. They filled the pelvis and masked other pathological conditions. Very frequently mixed up with these the surgeon would come across cystic spaces containing material that looked like chocolate syrup. These cysts were called chocolate cysts of the ovary. Until Sampson and Bailey published their work separately in 1921 and 1924 the nature of these cystic spaces was not understood. We now know that they are deposits of endometrium and that wherever endometrium occurs and is alive it functions

during menstruation. As Virgil Counsellor, of the Mayo Clinic, has put it, each can be regarded as a "little uterus". We now know that this condition can occur in almost any organ or tissue in the pelvis from the vagina to the peritoneum. It can give rise to the most dense and baffling adhesions, and if it is in an advanced stage it is one of the most formidable conditions that a surgeon can encounter in the pelvic cavity. Clinically speaking, I am certain that it is much more commonly recognized than it was thirty years ago; but one must allow for the fact that then it was frequently masked by the very common inflammatory conditions one found in the pelvis. It would be extremely difficult to get an accurate statistical comparison of the occurrence of endometriosis thirty years ago and now. As we now usually operate in a comparatively clean pelvis—that is, free from gross or acute inflammatory changes—we see much more of the early stages of endometriosis than we did. It is a disabling and sterilizing condition. It gives rise to intense and increasing pain. It is one of the real problems of the pelvic surgeon. Fortunately it is not so common in women aged under forty years. A patient with extensive endometriosis can be given complete surgical relief only by removal of both ovaries, the exciting cause of menstruation each month being thus removed. It is in the group of younger women, particularly in the treatment of the woman in her thirties who has not yet had children, that surgical judgement is required. If such a patient has fairly extensive endometriosis, one has to balance the possibilities of giving her relief from pain and leaving her sufficient ovary to have a chance of pregnancy.

One of the most intriguing problems of endometriosis is the tendency to invade the surrounding structures. In this it comes very close to malignant disease. Indeed, one teaches that there are only three conditions which give rise to fixation and hardness in the pelvic appendages—namely, chronic inflammation, endometriosis and carcinoma. Sometimes it is extremely difficult to differentiate between the three. One has to take into consideration the history, the clinical findings and the age of the patient, and then balance the probabilities. Frequently the final diagnosis will be made only on the operating table.

Diagnostic Methods.

Our skilled colleagues in the laboratory have given us many aids to diagnosis in the past thirty years. Their discoveries in blood conditions, blood dyscrasias, anæmias, the Rh factor and blood groupings have been of very great assistance to us. These have been the basis of the life-saving blood transfusions which have improved and extended the possibilities of surgery in the pelvis. The Aschheim-Zondek reaction (1927), which was based on the presence in the urine of the hormone of the chorionic villi, has been of great value in the early differential diagnosis of pregnancy. Other chemical tests for pregnancy have, of course, been developed since then.

Unfortunately there have not yet been evolved any simple practical tests to estimate the amounts of œstrogen or progesterone circulating in the blood at any given time. When these can be estimated easily, accurately and cheaply, a great advance will have been made in the indications for the use of endocrine substances in treatment. The time has not yet come when this is of practical value to the practising physician. The estimation of 17-ketosteroids is useful in the study of some of the disturbances of the suprarenal cortex leading to endocrine maldevelopment or precocious development.

Rubin's test and the associated tests of the patency of the uterine tubes by salpingography are of great value in the diagnosis of the physical side of sterility. This, indirectly, has led us to the realization of the important part played by the male in sterility, and to the necessity for checking the male partner in every case of sterility before proceeding with operative procedures on the female partner. It is tragic to subject the woman to extensive pelvic surgery in the hope of enabling her to have a baby, only to discover afterwards that the male partner is sterile; but until we had some practical means of investigating the patency or otherwise of the Fallopian or uterine tubes the woman had to bear the blame in every case.

Reference has already been made to the value of cytological examinations in the early diagnosis of cancer. This is a very distinct advance and a very valuable one. In competent hands it will lead to the discovery of many cases of cancer at the stage when it can be completely cured by surgical means. I am hopeful that the day will come when a simple chemical test will reveal the presence of cancer tissues in the body. The great advances in physics—the electron microscope, splitting the atom, the use of isotopes—all should have an application to our gynæcological problems. I hope our younger men will follow up these valuable aids and apply them with keenness and insight to the many problems that we have still to solve.

But above and behind all these chemical, biological and physical tests there remains the *tactus eruditus* of the trained clinical observer. Nothing can, in my opinion, replace an accurate history taken with patience and understanding, a thorough physical examination, and the investigation by fingers trained by patience, persistence and observation to the task of making a diagnosis. The skilled and trained touch of the acutely observant clinician is still the most valuable weapon in the armamentarium of clinical investigation. Well was it said in the days of my studenthood: "Never miss a P.V., a P.R. or a P.M.". There is so much to learn from each, provided that the observations are interpreted on a basis of wide knowledge and sound common sense. Of all the senses that we use in diagnosis, I do feel that common sense is the most important of all. We must look at our patients as human beings and try to solve the problems behind the signs and symptoms presented to us. I am afraid that many of the students of today are so overwhelmed with the numerous laboratory and radiological aids to diagnosis that they forget the human being they are examining and the profound effect that the nervous system can have upon the human body.

The Autonomic Nervous System.

There is one department of the science of anatomy in which more progress has been made over the last thirty years than in all others. That is in our knowledge of the autonomic nervous system, which includes both the sympathetic and the parasympathetic nervous system. The anatomists and physiologists have made great advances in our knowledge of these important subdivisions of the nervous system; but it was Walter B. Cannon's historical work on "Bodily Changes in Pain, Hunger, Fear and Rage" (1929) that opened the eyes of the medical profession to the profound influence that the autonomic nervous system has upon mental and bodily behaviour. I would recommend you to read this book, and also "The Wisdom of the Body", by W. B. Cannon, to get a clear picture of the autonomic nervous system and its influence on the human body. The profound effects of the elementary passions and emotions on the physical and mental make-up of the individual are of very great importance to the practising physician. Many patients take refuge in pain or in fear as an escape mechanism from the problems of their daily life. The wise clinician will be on guard. Beware of operating on the tired housewife. This is where the discerning general practitioner, in close contact with the daily lives of his patients, has a great advantage over the specialist, who sees a patient only perhaps for a very short period and knows very little of the background of the family life. I feel that many operations could be avoided if we only knew the mental background of our patients and the problems they have to face from day to day. Very briefly stated, one may say that the sympathetic nervous system is that portion of the nervous system which deals with "fright, flight or fight", while the parasympathetic nervous system is that part which deals with bodily comfort and well-being. You may have noticed in the literature that comes to you regularly from the drug houses how many preparations of drugs you receive these days that deal with soothing the autonomic nervous system. This is an

indication of the important part that this plays in practice; and while I trust you will never be what I call a "blotter doctor"—that is, take all your prescribing from the blotters which you receive from the chemical manufacturers—I do trust that you will feel it worth while to make a special study of the influence of the autonomic nervous system on the lives, habits and symptoms of your patients. This, to my mind, is one of the great advances of modern medicine over the last thirty years. We speak of its application to medical problems as "psychosomatic" medicine. A new body of literature has grown up based on this concept of mental and bodily function. The "psyche" has a very great influence on the "soma". I would commend to you a close study of "The Neuroses" by Walter Alvarez, of the Mayo Clinic. It will give a general practitioner a sound and very readable basis for the application of practical psychiatry to the problems of the everyday men and women among whom he practises. It is a book packed with practical common sense, and one that will well repay the busy general practitioner as well as the specialist, for it is based on both wisdom and knowledge—a somewhat rare combination.

Retroversion of the Uterus.

One of the problems on which our views have changed very considerably over the last thirty years has been that of retroversion of the uterus. In my earlier days any uterus that was found to be displaced was regarded as an immediate target for surgery. It had, as one author of those times stated, either to be impaled on a pessary or pulled or pushed into its place by surgery. We have come to realize that many retroversions cause no symptoms; indeed 3% of such conditions are symptomless and call for no treatment unless there is some special indication. Many young women grow up with the uterus in the retroverted position from congenital causes. They may be unaware that there is anything wrong with the position of the uterus until it is discovered in the course of a routine examination for some other condition. Many of them get married and have their babies without any difficulty at all; but a severe retroversion may be a cause of miscarriages, of pelvic pain or discomfort or of dyspareunia. This is, of course, quite apart from the retroversion that follows an abortion or a confinement, in which there may be other mechanical causes, and there may be as well inflammatory changes in the pelvis with local adhesions. The latter type of retroversion calls for surgical intervention and correction; but in regard to congenital retroversion in the young woman, it is often better to say nothing to the patient if you discover it in the course of an examination, but to communicate the fact to her mother or her near relative, so that you are covered in case a kind colleague reveals the fact to the patient later on. Simple uncomplicated congenital retroversions are generally best left alone.

Sterility.

Our knowledge of the fundamental causes of sterility has increased a very great deal over the last thirty years. As I have already indicated, Rubin's test and salpingography have been a great help. The study of the endocrine system and the knowledge of the interrelationship of the various endocrine organs have also led to great advances in our knowledge of the causes of sterility. The blood picture and blood grouping have played a part as well. The chemistry of the uterine cervix and its secretions and the bacteriological study and chemical reaction of the vaginal flora have also advanced our knowledge of this complex problem a very great deal. There is no doubt that the treatment of sterility has advanced considerably. There still remains a great deal of work to be done in this field, particularly in regard to the questions of compatibility of the chemistry of the two hopeful parents. It is a chemical and biological problem, as well as an anatomical and physiological one.

Pain.

The most persistent problem that we are faced with in gynæcology is the treatment of pain. Pain seems to be given to mankind as the safeguard, warning him of serious trouble in the bodily economy. Our problem is to find out what is wrong and put it right, and to relieve the pain rationally by removing the cause. However, there are two sides to pain. There is the psychical aspect and the physical aspect. Many of the pains that we encounter in practice are psychical or escape mechanisms. When there are psychical causes the relief of the symptoms is more difficult, but the condition will often yield to a thorough investigation. Many a patient is reassured and her pains disappear if she is told that she has nothing seriously wrong with her. One of the great classics of English medical literature is Hilton's "Rest and Pain". It should be read at least every two years by every practising physician.

We have many more resources available to us to deal with and investigate pain than we had thirty years ago. The radiologist can help us with problems of bowel tumours, growths, obstructions, inflammations and diverticulitis, as well as in the study of injuries or diseases affecting the bones and joints of the pelvis. Pain always calls for careful clinical investigation. If in the course of your physical examination you can reproduce the pain the patient complains of by pressing on or moving any particular lump or organ in the pelvis, you have gone a long way towards finding the cause of the pain. The chemist has brought to our aid a whole series of analgesic drugs short of the opium group. Opium and alcohol are two drugs which should be avoided as far as is humanly possible in the treatment of pain.

In intractable pain, as in the pain of advanced malignant disease, we have available to us the operations of chordotomy or the injection of alcohol into the lower part of the spinal column.

Presacral neurectomy was introduced some years ago as an operation to be used in the treatment of severe dysmenorrhœa. It is an operation that should be performed only with great discretion in advanced cases in which every other means of treatment has failed. Used in this way it is a valuable advance in the treatment of menstrual pain, but it requires skill and care. It is an operation not to be lightly undertaken, as there are many anatomical risks, particularly as regards the left common iliac vein, the common iliac arteries and the ureters. The operation is of no avail unless it is carried out thoroughly. It is of no use in any condition in which the cause of the pain has spread outside the pelvic organs themselves; that is, if a malignant condition of the uterus has spread into the pelvic connective tissue presacral neurectomy is quite useless. I am afraid it is an operation which has been used rather indiscriminately, without a proper realization of the anatomical basis upon which it lies.

Menstrual pains will often yield to a judicious combination of the endocrines, but here again a sound knowledge of the physiology of the workings of the endocrine system is essential. They should not be used blindly or indiscriminately, but with a deliberate purpose in each case.

Conclusion.

To sum up, let us remember that gynæcology is the application of the principles of medicine and surgery to the problems of the diseases peculiar to women. As the basic sciences on which all medicine and surgery depend have advanced, so has our knowledge of diagnosis and treatment advanced. We practise a profession that is constantly advancing. The frontiers of knowledge are expanding every day. We have a bounden duty to try to keep in touch with the modern advances. We can do it only by wide reading and by keeping in touch with our fellow practitioners. Let us never be content to stand still, but let us keep up and doing. We carry grave responsibilities and are heirs to a great tradition. May we always prove worthy of the trust that our patients repose in us! But we can do so only by constant study and reflection. That is our privilege and our penance. I feel it is well worth the effort.

THE IMMEDIATE MANAGEMENT OF CLOSED CHEST INJURIES.

By HARRY M. WINDSOR,
Sydney.

CLOSED injuries of the chest are associated with certain mechanical disturbances. These are: (i) surgical emphysema and pneumothorax, (ii) hæmoptysis, (iii) hæmothorax, (iv) fractured ribs, paradoxical respiration and lung collapse, and (v) diaphragmo-pericardial disruption.

The significance and management of each of these will be briefly discussed.

A young man is knocked down by a car. When admitted to hospital he is found to be mildly shocked. He has had a small hæmoptysis. Over the anterior aspect of the left side of his chest there is an area of surgical emphysema. It is noted that every time he takes a breath this area moves inwards instead of outwards; that is to say, he has an area of paradoxical movement. An X-ray examination of his chest demonstrates fractures of the second, third and fourth left ribs, a marginal pneumothorax, and a small basal collection of fluid.

Such a case illustrates the common way in which a closed chest injury presents, and most of us in the course of our experience have met with similar cases. It must be appreciated that this description depicts a relatively mild closed chest injury and, irrespective of what is done, the patient will soon recover. The severe case, on the other hand, can be an exacting clinical problem, and its successful management demands a thorough understanding of the clinical and radiographic features of the numerous combinations of the above mechanical disturbances.

Surgical Emphysema and Pneumothorax.

Surgical emphysema and pneumothorax have been linked because both signify lung damage and escape of air; escape into the pleural cavity in the case of a pneumothorax, and further afield, into the mediastinum or chest wall, in the case of surgical emphysema. They usually occur in combination.

In the absence of a pneumothorax—owing to the exclusion of the air leak by adhesions from the general pleural cavity—surgical emphysema can generally be disregarded.

This opinion has been reached after observation of many cases of extreme surgical emphysema.

When the emphysema is so great that the patient cannot open his eyes, or his closest relatives fail to recognize him, it can be classed as extreme. Such patients are always a little dyspnœic, complain of tightness in the chest, and have a characteristic ægophonous voice. If the glottis is examined, the true cords will be found to be normal. (The nature of the attachment of the mucous membrane to the true cords renders the passage of air into the edge of the cords impossible.) In a few there will be some swelling of the false cord region, but in all a patent airway will be found.

A more significant, though rare, finding is the presence of engorged veins, due to interference with the venous return. Surgical emphysema will never obstruct the upper respiratory tract, but it will obstruct the great veins. Therein lies the danger.

If the patient is distressed and the great veins are engorged, removal of the air is indicated. This is readily accomplished by manual compression following a suprasternal incision into the emphysematous tissues, and if necessary one or two other suitably placed incisions.

The presence of a pneumothorax alters the problem. A pneumothorax ought never to be disregarded. The severity of the symptoms is largely dependent on the degree of intrathoracic tension produced, but it can be stated without qualification that any pneumothorax should be rectified at once.

Some years ago, in the casualty room of an English hospital, I was watching a young man who had sustained a chest injury. An X-ray examination demonstrated two fractured ribs and a moderate pneumothorax. Whilst waiting for the air to be withdrawn he suddenly coughed and died. Air embolism was the diagnosis, and this was adequately substantiated by the careful post-mortem examination. A traumatic pneumothorax can easily be the source of an air embolus.

The rectification of a traumatic pneumothorax is a simple matter, carried out as follows:

1. A needle, connected to a manometer, is inserted into the pleural cavity, usually into the second intercostal space in front. The intrapleural pressure is taken. In a mild tension it will be found to be about 0, −5 centimetres of water. Air is then withdrawn until a normal negative intrapleural pressure (−5, −10 centimetres of water) is reached.

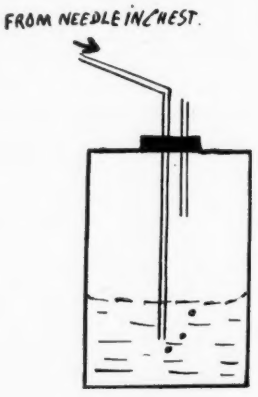

FIGURE I.

2. The needle is left *in situ* for fifteen minutes, and if at the end of that time the pressure is still −5, −10 centimetres of water, it can be assumed that the leak is sealed and the needle can be removed. If it is found that a negative pressure is not maintained, the process is repeated and a further check made in fifteen minutes.

3. If a leak is still present, the needle is connected to a length of tubing and the air allowed to escape through an underwater seal bottle (Figure I). Most leaks seal themselves within twenty-four to thirty-six hours.

4. When bubbles cease to escape, and a negative pressure swing is noted in the tube, the needle is removed from the pleural cavity.

It is realized that the refinement of a manometer is not always available. It is not essential. The air can be removed with a two-way syringe, the process being continued as long as air can be withdrawn. If doubt still exists as to the patency of the leak, the underwater seal bottle will resolve it.

It has been already stated that surgical emphysema and pneumothorax most often occur in combination. Rarely does the one occur without the other. The following case illustrates the extreme degree to which this combination can progress.

CASE I.—M.A., a man of forty-two years, was knocked down by a truck. He was admitted to hospital on July 5, 1951, twenty minutes after his injury. He was in great respiratory distress. There was a shift of the mediastinum to the right. The left chest wall was bulging. No breath sounds could be heard on the left side. An X-ray examination of the chest (Figure II) demonstrated a left pneumothorax with complete collapse of the left lung.

A needle was inserted into the left pleural cavity, and a pressure reading of +20, +35 centimetres of water obtained. Removal of two litres of air made no impression. The needle was then connected to an underwater seal bottle and the air allowed to escape through the water. Two hours later the air was bubbling as furiously as ever. A further

X-ray examination demonstrated that the lung was still completely collapsed. The high intrapleural tension, the immediate reaccumulation and the continued bubbling of air pointed to the injury of a major bronchus. The patient was submitted to bronchoscopy under local anæsthesia, and a ragged mucosal tear was noted in the lateral wall of the left bronchus below the left upper lobe orifice. Thoracotomy was performed. A tear three-quarters of an inch long was found in the postero-lateral wall of the left bronchus below the upper lobe bronchus. This was closed with interrupted linen sutures. After closure of the rent the lung reexpanded. The chest was closed without drainage. The patient made an uneventful recovery.

In this case there were three reasons for the severe respiratory distress: (*a*) the high tension in the left pleural cavity, (*b*) the functionless left lung, (*c*) the fact that as much air was passing into the left pleural cavity as into the right lung.

When the tension is high and there is continued escape of large quantities of air, the possibility of injury to a major bronchus must be considered. The treatment is urgent thoracotomy and suture of the bronchus.

I have seen two patients suffer this injury and survive without thoracotomy. In neither was the true nature of the injury appreciated until weeks after the patient's admission to hospital. The end result, namely, gross intrapulmonary and intrapleural suppuration, was the same in each. It is of interest that one of these patients sustained his injury when trapped at the bottom of a lift well by a descending lift.

Hæmoptysis.

Hæmoptysis is less frequent than one would expect—an indication that the main violence, in most cases, is sustained by the thoracic parietes. When it occurs it is usually slight, rarely severe, and never exsanguinating. If it is severe, the danger lies not in blood loss but in the likelihood of asphyxia. In the occasional severe hæmoptysis, coincident hæmothorax will be found. This hæmothorax is the sump from which the blood leaks into the torn alveolar spaces.

CASE II.—S.Y., a youth of twenty years, was admitted to hospital on September 23, 1950. He had crashed with his motor-cycle into a brick wall. When admitted he was severely shocked with a blood pressure of 85 millimetres of mercury, systolic, and 50 millimetres, diastolic. There was surgical emphysema over his left anterior chest wall. An X-ray examination of his chest demonstrated a left pneumothorax.

A needle was inserted into the left pleural cavity and the air allowed to bubble through an under-water seal bottle.

On September 24 the patient became uncontrollable, cyanosed and irrational. He was, in consequence, heavily sedated.

He was first seen by me on September 25, 1950, by which time the needle had been removed from his left pleural cavity. He had then begun to cough considerable quantities of blood. He was cyanosed, stuporose and having tonic fits. These latter were considered to be of cyanotic nature. An X-ray examination of his chest at this stage (Figure III) demonstrated: (i) a left hæmopneumothorax, (ii) collapse of the right lower lobe, (iii) the difficulty of obtaining a satisfactory picture with portable X-ray equipment and an uncooperative patient.

In effect the deduction from the film was that the patient was being asphyxiated from the spill of blood from his left pleural cavity into his right bronchus, via a broncho-pleural fistula. At 9.30 p.m. a needle was reinserted into the left pleural cavity and attached to an underwater seal bottle. The patient was submitted to bronchoscopy without anæsthesia, and a considerable quantity of blood removed from the bronchial tree. The air in the left pleural cavity, in the meantime, escaped through the under-water seal bottle.

Improvement began at once. He was nursed sitting up. No further sedation was given. By the morning of September 26 he was cooperative and able to clear his own bronchial tree. A further chest X-ray examination revealed reexpansion of the lower lobe of the right lung. Subsequent to this, his sputum became tarry, and on October 1 clots were aspirated from the left side of the chest. On October 3 a thoracotomy was performed and a clotted hæmothorax evacuated. After this he made an uninterrupted recovery. His pre-discharge X-ray picture is represented in Figure IV.

Hæmoptysis is usually mild, but it can be of such a degree as to cause asphyxia. If for reasons such as (*a*) over-sedation, (*b*) the pain of a crushed chest or (*c*) the amount of intrabronchial blood, the patient cannot clear his bronchial tree, then he must be submitted to bronchoscopy and an adequate airway reconstituted and maintained.

Should the bleeding continue and further difficulty be experienced by the patient in clearing his bronchial tree, the expedient of leaving a fine calibre tube in the trachea is useful. The ward sister is then able to keep the bronchial tree dry. If this is impossible, a tracheotomy can be a life-saving measure.

In my experience thoracotomy has never been necessary for the control of hæmoptysis in a non-penetrating injury; but I could readily imagine a moderate hæmothorax associated with a large bronchial fistula, leading to rapidly fatal asphyxia. I feel certain that there have been patients in whom the final fatal hæmoptysis might have been averted had thoracotomy been performed.

Hæmothorax.

The principles of treatment of uncomplicated hæmothorax have been standardized. A hæmothorax ought to be aspirated completely, as soon as possible, and the pleural cavity kept dry. There are two good reasons for this: (*a*) Until the blood is removed the lung will not reexpand. (*b*) Whilst the blood is present, so likewise is the nidus for a pyothorax.

There are two questions which often worry the clinician: (i) How much blood should be aspirated at any one attempt? (ii) Should the aspiration be stopped if the patient complains of pain during the procedure?

To the first the answer is: "All, if possible." In the past it has been accepted that if too much blood is removed the negative intrapleural pressure induced will restart bleeding. This is conceded, but if all blood is removed and the intrapleural pressure returned to normal (−5, −10 centimetres of water) at the termination of the procedure, there is little danger of renewed bleeding.

To the second the answer is: "It should be painless." There are two common causes for pain during this procedure: (*a*) inexpert use of the aspirating needle, (*b*) production of a high negative intrapleural pressure.

The latter is the commonest reason for the pain. It will be abolished at once if a little air is allowed into the chest and the intrapleural pressures are returned to normal.

When a hæmopneumothorax is present the principles of treatment are the same. All air and blood must be removed as soon as possible.

Large hæmothoraces are usually associated with parietal injuries as demonstrated by the absence of hæmoptysis.

In most cases even a massive hæmorrhage into the pleural cavity is well tolerated. A thoracotomy is very rarely necessary for the control of bleeding of this nature.

CASE III.—S.K., a man of forty-three years, was admitted to hospital on February 23, 1951. On February 20, 1951, he had fallen backwards down some stairs and bruised the left side of his chest. Three days after the injury he had become breathless and weak. On admission to hospital he was pallid with a pulse rate of 120 per minute. An X-ray examination of his chest (Figure V) revealed a massive hæmothorax. This was aspirated at once, and one and three-quarter pints of blood with a hæmoglobin value of 90% were removed. On the third, fourth, seventh and tenth days after his admission to hospital further aspirations were performed and one pint (hæmoglobin value 90%), three and a half pints (hæmoglobin value 75%), one and a half pints (hæmoglobin value 75%), and three-quarters of a pint (hæmoglobin value 75%) were removed. At this stage X-ray examination of the chest demonstrated loculation, and further attempts at aspiration produced merely a few small clots. As no streptokinase was available, thoracotomy was performed on March 10, 1951, and a clotted hæmothorax evacuated. The lower lobe of the left lung was found to be compressed and firmly bound by a well formed fibrin envelope to the pericardium. The lobe was decorticated and the chest closed, a dependent intercostal tube being left *in situ*. The lung

rapidly reexpanded, after which the patient made an uninterrupted recovery.

In the occasional case clotting occurs. Streptokinase has been reported to be of help in liquefying these clots and obviating the necessity for thoracotomy. For my part, I have had little success with streptokinase; but if it is unavailable, the sooner the clots are evacuated by thoracotomy, the better. It is to be remembered that once organization has taken place the lung becomes bound down by a fibrin coat. In Case III this fibrin coat was firmly established in three weeks.

There is no excuse for the discharge of the patient with the "clotted hæmothorax" from hospital because he feels well and his temperature has been normal for ten days. Yet this is constantly being done. Such patients are to be found in all thoracic units, where their functionless lungs, their fibro-calcareous carapaces or their chronic empyemata are major problems.

Fractured Ribs, Pulmonary Collapse and Paradoxical Respiration.

Patients with multiple rib fractures and accompanying paradoxical respiration are always moderately shocked, irrespective of the underlying lung damage. With each breath, or, I should say, gasp (for pain will not allow of normal depth of respiration), the chest wall moves in, the volume of the hemithorax instead of increasing is diminished, expansion of the lung is interfered with and shock is increased.

Pulmonary collapse and paradox have been linked, because it has been noted that in cases of severe paradox the lung tends to collapse more so than in those with minor rib damage.

CASE IV.—S.G., a man of sixty-two years, was hit by a car. When admitted to hospital on June 15, 1951, he was found to have a compound fracture of his left leg. He was shocked, with a blood pressure of 70 millimetres of mercury, systolic, and 55 millimetres, diastolic. There was tenderness and crepitus over the third left rib. Some hours after admission he was taken to the operating theatre, and, under general anæsthesia, his compound fracture was cleaned and immobilized. After this procedure his condition, instead of improving, deteriorated. He was seen by me on June 17, 1951, at which time he was disorientated, cyanosed, restless and gurgling with retained sputum. There was paradoxical movement over the left side of his chest. This chest wall instability was due to fractures through the anterior ends of the upper six left ribs. An X-ray examination of his chest (Figure VI) demonstrated a left pneumothorax with complete collapse of the left lung.

The patient was immediately taken to the operating theatre. A pneumothorax needle was inserted into the left pleural cavity and connected with an under-water seal bottle. He was then submitted to bronchoscopy without anæsthesia, and large quantities of sputum were removed from his bronchial tree. During the bronchoscopy the air in his pleural cavity escaped through the under-water seal. The lung reexpanded at once, the pneumothorax needle being removed next day (Figure VII). When the lung had reexpanded, the paradoxical movement was found to be minimal; so no further measures to immobilize the chest were taken. The patient made a good recovery.

The treatment of such an injuiry can be summarized as follows:

1. A needle attached to a tube leading to an underwater seal bottle is inserted into the pleural cavity. The air is allowed to bubble off. The air is not actively removed at this stage, for if this is done a negative pressure is created in the pleural cavity and the offending intrabronchial sputum drawn further into the lung.

2. Bronchoscopy is performed and the intrabronchial secretions are removed. During this procedure the intrapleural air will bubble strongly through the water, and by the time the bronchus has been sucked dry the intrapleural pressures will usually be found to be negative. A patient with a traumatic pneumothorax must never be submitted to bronchoscopy without an air vent; the danger of air embolism is very real.

3. A paravertebral "Novocain" block is carried out and the chest strapped. It cannot be efficiently strapped whilst the pain of multiple rib fractures is present, and only a paravertebral block will overcome the pain. Efficient strapping will control paradoxical movement. Certain writers advise open operation and mechanical fixation of multiple rib fractures. I have not as yet seen a case in which I considered this necessary, although in two cases as many as 20 rib fractures and severe paradoxical respiration were present.

Diaphragmo-Pericardial Disruption.

CASE V.—N.B., a boy of six years, was admitted to hospital on January 23, 1951. He had been run over by a truck, the wheels of which passed over his body. When admitted he was cyanosed and shocked with a blood pressure of 85 millimetres of mercury. There were only the faintest breath sounds to be heard over the left side of his chest. He had some tenderness in the left hypochondrium and tenderness over the left pubic ramus. An X-ray examination of the chest (Figure VIII) clearly demonstrated a rupture of the diaphragm.

Three hours after his admission to hospital, his condition having improved (blood pressure 110 millimetres of mercury, systolic, and 65 millimetres, diastolic), he was taken to the operating theatre and a laparotomy performed. A large rent was found in the left dome of the diaphragm extending into the central tendon. Stomach and part of the transverse colon had herniated through this opening into the chest. Those viscera were returned to the abdomen, and the rent was closed with interrupted sutures. In the immediate post-operative phase the condition was satisfactory, but six hours after operation it began to deteriorate. The child died fourteen hours after operation. No autopsy was obtained.

CASE VI.—P.G., a boy of nine years, was admitted to hospital at 6 p.m. on October 24, 1951. He and his small sister had been pinned when a brick wall fell upon them three hours previously. On admission to hospital the boy was in a state of extreme shock, this being the outstanding clinical feature. He was dyspnœic with a respiration rate of 36 per minute. He had diminished air entry over the left side of the chest. The clinical signs failed to account for the degree of shock, but an X-ray examination of the chest (Figure IX) revealed the reason for its severity. After viewing the X-ray film, Dr. John Benecke was able to diagnose correctly "rupture of the diaphragm".

Four hours after his admission to hospital, the boy's condition having improved, he was taken to the operating theatre. The experience of Case V influenced the decision as to the approach, and this time a left thoracotomy was performed.

When the chest had been opened, the injury was found to be more extensive than had been anticipated. The stomach, transverse colon and great omentum and a few coils of small bowel were in the thorax. There was a large tear extending across the dome of the diaphragm into the central tendon. This was continued upwards, resulting in a tear of fibrous pericardium extending from central tendon to base of heart. The heart, completely extrapericardial, lay in the left pleural cavity. The left ventricle was plum-coloured, and a hæmatoma was present over the lower end of the anterior surface of the right ventricle. A hæmatoma filled the hilum of the left lung. The lower lobe of the left lung was collapsed. Half a pint of blood was present in the pleural cavity.

The blood was evacuated, the abdominal contents were replaced, the diaphragm was sutured, and the lower lobe of the left lung was reexpanded. No attempt was made to close the pericardium. The chest was then closed, an intercostal tube being left *in situ*.

At the conclusion of the operation the child's condition was satisfactory. In view of the state of the myocardium further intravenous therapy was considered inadvisable.

Throughout the night and during the next day the boy's condition gradually deteriorated. The blood pressure dropped to 60 millimetres of mercury. An electrocardiogram (Figure X) demonstrated changes indicative of severe myocardial damage. He died at 9 p.m. on October 25, 1951.

At autopsy a dilated heart was found filling the lower part of the left pleural cavity. The other findings were as at operation, with the addition of hæmorrhage into the thymus and some retroperitoneal hæmorrhage. Dissection of the heart revealed subpericardial hæmorrhages along the

lines of all the coronary vessels. The myocardium of the thin-walled right ventricle was laminated by an intramuscular clot. A large ante-mortem clot was present within the chamber of the right ventricle. Death was undoubtedly due to coronary occlusion.

CASE VII.—A.K., aged forty-nine years, was crushed between buffers in a shunting yard accident at Bathurst on June 17, 1952. He was leaning over a buffer adjusting a tail light when an engine was shunted into his midriff. Soon after the accident he was seen by Dr. Brian Duffy, who found him shocked and in agonizing upper abdominal pain. His pulse rate was 80 per minute. Numerous extrasystoles were present.

Two hours after the accident a laparotomy was carried out. Apart from a small tear in the root of the mesentery there was little to account for the severe degree of shock. The abdomen was closed.

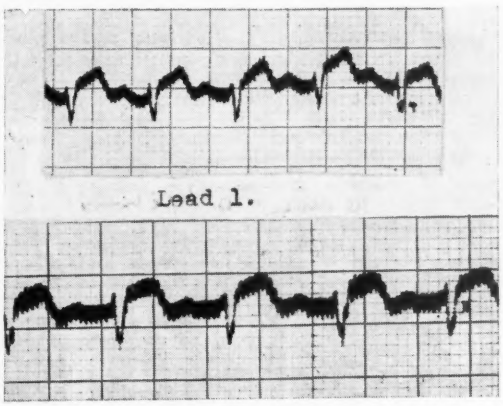

FIGURE X.

The high take off of the *S T* wave is seen in both leads. The inverted *T* wave is seen in the AVL lead.

In the immediate post-operative phase his pulse rate rose to 116 per minute and his respiration rate to 46 per minute, and he began to vomit. An X-ray examination of his chest (Figure XI) demonstrated what appeared to be a rupture of the diaphragm.

A stomach tube was passed and the stomach aspirated. On the third post-operative day some trouble was experienced with the tube, and the stomach immediately became grossly distended. The mediastinum moved to the right; the pulse rate rose to 140 per minute and became very irregular. The tube was readjusted, and 80 ounces of dark fluid were then aspirated from the stomach. After this the patient improved, the pulse rate dropping to 104 per minute. An electrocardiogram at this stage (Figure XIIA) demonstrated myocardial damage.

In the succeeding days it was found that the patient remained comfortable only if the stomach was aspirated hourly. Any relaxation of this routine led to distension of the stomach (seen in serial chest X-ray films) and a rise in the pulse rate. Nutrition was maintained with intravenous fluid therapy. This regime was continued until June 27, 1952, when he was transferred from Bathurst to Sydney. On his admission to Saint Vincent's Hospital he was found to be in excellent general condition. His pulse rate was 80 per minute, but numerous extrasystoles were present. During the trip to Sydney the stomach was aspirated at regular intervals. When he arrived, aspiration produced only a couple of ounces of fluid in which bile was identified. This confirmed Dr. B. Duffy's finding of bile in the gastric contents during the latter days of his stay in Bathurst Hospital.

Soon after arrival in Sydney he underwent X-ray screening examination and a barium bolus was given. The barium lodged in the stomach and remained there. In other words, despite the bile he had a complete obstruction to gastric outflow.

Operation: Thoracotomy was performed on June 27, 1952. The left ninth rib was resected and the chest entered. The diaphragm was found to have a transverse tear one and a half inches long, about one inch in front of the œsophageal hiatus. The torn edges of the diaphragm were everted into the chest. The fundus of the stomach projected through this opening. The torn edges clasped the fundus tightly. The gastric tube was found to pass down through the hiatus, then into the fundus above the diaphragm. The obstruction was as depicted in Figure XIII. There were a number of hæmatomata on the upper surface of the diaphragm. One of them lay in the diaphragmo-pericardial angle. It was easily seen why the injury had not been noted at laparotomy. The everted diaphragmatic edges and the tightly clasped fundus completely obliterated the tear from the abdominal aspect. The hernia was replaced and the diaphragm reconstituted.

The post-operative course was uneventful. An electrocardiogram on July 4, 1952 (Figure XIIB), demonstrated some degree of myocardial recovery. In view of the juxtapericardial bruising, the irregular pulse and the electro-

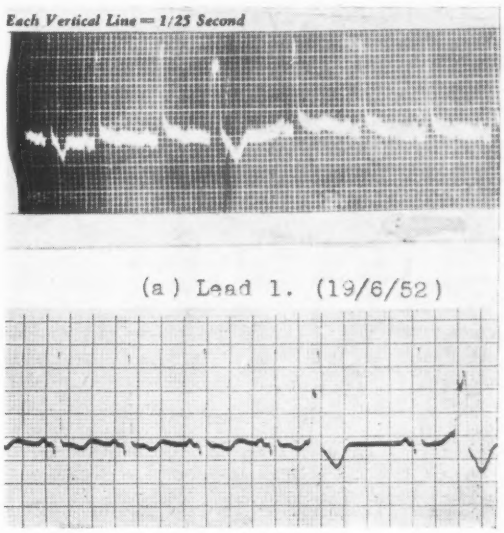

FIGURE XII.

(*a*) The high take off of the *S T* wave and the inverted *T* waves are seen. (*b*) The *S T* waves have become normal. The *T* waves are still inverted. Ventricular extrasystoles are present.

cardiographic changes, it was felt that the myocardial damage was moderately severe. With this in mind, he was returned to the Bathurst Hospital on July 13, 1952, for a further period of six weeks' bed rest.

I am very grateful to Dr. Duffy for his kindness in forwarding and allowing me to publish the details of this patient's stay in the Bathurst Hospital.

The following comments may be made on diaphragmo-pericardial disruption in the light of these cases.

1. The injury of diaphragmo-pericardial disruption is an established entity. The tear is a transverse one. If it extends into the central tendon, then the pericardium must be disrupted. The three cases described illustrate the three degrees of injury: (*a*) across the dome (Case VII), (*b*) across the dome into the central tendon (Case V), (*c*) across the dome into the central tendon with upward continuation to the base of the pericardium (Case VI).

2. The cause is crushing violence to the midriff on the left side. All three cases demonstrated this.

3. Associated myocardial damage is to be expected. In Case V it was almost certainly present, but this suspicion was never substantiated. In Case VI the findings were unequivocal. In Case VII the juxtapericardial hæmatoma, the extrasystoles and the electrocardiographic changes all pointed to its presence.

4. There are relatively few signs to account for the severe shock. In Cases V and VI it was the increase in respiration rate and the diminished air entry over the left side of the chest which aroused suspicion and pointed the way to the chest X-ray examination which established the diagnosis, but in Case VII the abdominal pain pointed to an intraabdominal injury.

5. Because of the few signs this is an easy injury to overlook. If the myocardial damage is slight the patient survives. Years may elapse before the true nature of the injury is revealed in the presence of a troublesome diaphragmatic hernia.

FIGURE XIII.

6. The prognosis is grave for two reasons: (*a*) damage to the myocardium, (*b*) the fact that the crushing nature of the violence is likely to cause associated injuries (Cases V and VI).

7. The treatment is operation, and my natural preference is for thoracotomy. There are good reasons for early operation: (*a*) The *status quo* of intrathoracic mechanics ought to be restored as soon as possible. A damaged myocardium will demand as little hindrance as possible if it is to recover. The sequence of events following distension of the fundus in Case VII adequately demonstrated this feature. (*b*) Repair of the hernia at this stage is a very simple procedure.

8. The patient ought to be looked upon as having sustained a coronary occlusion and treated accordingly postoperatively.

General Measures.

I do not propose dwelling on the well-established general surgical measures of blood replacement, sedation and chemotherapy. I would give one word of warning concerning sedation: too often it is overdone, and the consequent depression of respiration in a patient who needs the maximum ventilation can be an added grave embarrassment.

Blood, sedatives and chemotherapeutic agents are not the answers to these problems. They are problems in mechanics and must be treated by what for the most part are simple mechanical measures.

Conclusion.

In some cases the successful outcome will depend upon immediate action, and that action must be taken only after inspection of a chest X-ray film. The time is often late, the X-ray examination is of necessity carried out with portable equipment, and the patient is distressed and unable to hold his breath, with the result that a poor X-ray picture is inevitable. This poor X-ray picture must be accurately interpreted by the clinician if his subsequent action is to be the right one.

I would refer again to Case II, for it demonstrates the combination of surgical emphysema, tension pneumothorax, hæmothorax, hæmoptysis, contralateral lobar collapse, asphyxia and finally clotted hæmothorax. It illustrates the management of, and the priority given to, these various mechanical disturbances.

The mechanical management of these cases can be summarized by saying:

1. If there is air in the pleural cavity, it must be removed at once, or synchronously with endobronchial secretions if bronchoscopy is necessary for their removal.

2. If there is blood in the pleural cavity, it must be removed completely by aspiration as soon as possible.

3. If the bronchus is obstructed by blood or secretions, it must be cleared at once by bronchoscopy.

4. If the chest wall is paradoxical, it must be stabilized.

5. If bleeding is uncontrollable, if a major bronchus is injured, or if the diaphragm is disrupted, a thoracotomy must be performed.

Acknowledgements.

I should like to express my gratitude to the nursing staffs of Saint Vincent's and Lewisham Hospitals for their cooperation. These patients were all managed in one or other of the two hospitals. Finally, I should like to offer a word of thanks to Dr. Stewart Marshall, Dr. L. T. Shea, Dr. N. Bartrop and Dr. Ken McLeod. They were responsible for some excellent anæsthesia.

HISTOPLASMOSIS: A REVIEW, WITH REPORT OF A FATAL AUSTRALIAN CASE.

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THIS paper reports a case of histoplasmosis in a native of Queensland who had never left Australia. The disease has been reported in Australia only once previously, by Johnson and Derrick (1948), and a third infection is described by Dowe *et alii* in this journal. The occurrence of these cases is of considerable importance in demonstrating that the disease may be contracted within Australia. In America and elsewhere cases have been discovered in the reviewing of old autopsy material, in which the infection had been overlooked although organisms were present in profusion. It is likely that cases have also been overlooked in this way in Australia.

Histoplasmosis is an acute, subacute or chronic systemic infection caused by the fungus *Histoplasma capsulatum* Darling, 1906. Darling thought that the organism was a protozoan, but Da Rocha-Lima observed budding in tissue sections and suggested that it was a fungus, which De Monbreun confirmed by growing it in culture in 1934. The great majority of cases reported have occurred in the United States of America since 1938. Parsons and Zarafonetis reviewed 71 cases and reported seven new cases in 1945. The geographic distribution outside America is uncertain, but it is probable that the disease is widely distributed throughout the temperate, subtropical and tropical countries of the world. Good recent reviews of the subject are those of Parsons and Zarafonetis (1945), of Pinkerton (1949), and of Ziegler (1946). This account summarizes what is known of the infection in humans.

Mycology.

Histoplasma capsulatum occurs in the tissues as rounded or ovoid, encapsulated, yeast-like bodies 1·0μ to 5·0μ in diameter, closely packed within reticulo-endothelial and other cells. This form, which reproduces by budding, is the only one found in the tissues. The chromatin mass is irregular in distribution, and sometimes a large vacuole is seen within the cell body. It stains well with hæmatoxylin and eosin and with Giemsa, both stains giving a charac-

teristic picture from which rapid diagnosis can be made (Figures I and II); with these stains the organism shows a darkly stained central body and a lightly stained capsule. For detailed study, Feulgen, Bauer, Best's carmine and Gram methods may be employed. The cell chromatin is Feulgen-positive, while Bauer and carmine stains show the so-called capsule more clearly.

Histoplasma grows well on a variety of media and can be cultured fairly readily from open lesions. Suspected material, after fragmentation or grinding, can be cultured on Sabouraud's medium, beef infusion glucose broth, or blood agars. Of the last-mentioned, blood agar *plus* antibiotics is perhaps the most useful (Ajello, 1951). Although *Histoplasma capsulatum* is not affected by antibiotics, it is difficult to isolate on Littman's oxgall-streptomycin-gentian violet medium (Littmann, 1948).

In culture, *Histoplasma capsulatum* is dimorphic, forming either a yeast-like or a mycelial form depending upon conditions of growth. On blood agar at 37° C. the organism grows as a dull white, wrinkled colony, which consists of oval budding yeast-like forms 1·0μ to 5·0μ in diameter, similar to those found in the tissues. After two to three weeks' growth in the yeast phase some cells may encyst, enlarging to form cells three to four times the size of the normal yeast-like cell. These encysted forms are more resistant to desiccation.

On Sabouraud's medium at 25° C. the fungus grows slowly, to produce a colony with abundant fluffy white aerial mycelium; later, however, this aerial mycelium turns buff to brown in colour. The mycelium consists of fine, septate, branching hyphæ approximately 2·5μ in diameter, the cells being multinucleate; conidia are borne either on short lateral branches or sessile on the sides of the hyphæ. They are small and globose, 2·5μ to 3·0μ in diameter, and are produced on fairly young colonies. A little later, chlamydospores are produced. These are round to pyriform, thick-walled, tuberculate forms 7·5μ to 20μ in diameter, containing numerous fat globules. They may be borne apically, but are generally lateral, either pedicellate or sessile, single or in chains. No sexual organs of *Histoplasma capsulatum* have been seen.

Histoplasma capsulatum grows slowly but well on a variety of media including corn meal, malt, potato-dextrose and Czapek's agar beef and glucose broths, and brain, heart and blood media. On nutrient gelatin the growth is mycelial and very slow, giving very slow liquefaction. Sugars are neither fermented nor acidified. Older colonies produce an odour like rotting wood, or that noted in cultures of the Tricophytons and Microsporons.

Histoplasma capsulatum is an obligate aerobe in both its phases. With restriction of oxygen, mycelial growth ceases, and in the yeast form some cells will tend to encyst to give the thick-walled spore. These spores will withstand a temperature of 45° C. for thirty minutes, but are killed by a temperature of 55° C. or over for the same period.

The temperature of growth and the pH of the medium, as well as its composition, determine the type of colony produced. The yeast-like colony grows best at 37° C. and at pH 8·4, as long as correct nutrients are present. The mycelial colony is favoured by lower temperatures and by a lower pH (5·0 to 7·6), and it is readily produced from the yeast-like phase by lowering of the pH or the temperature.

In artificial inoculation experiments it has been found that the yeast-like phase is much more infective than the mycelial phase.

Mice and rats have generally been used as experimental animals for the study of *Histoplasma capsulatum* and for initial isolation from the soil, but the disease takes at least sixteen days to become apparent. Moore (1941) has grown *Histoplasma capsulatum* on the chorio-allantoic membrane of the chick, the organism occurring as the typical yeast-like form in the membrane lesions. This method provides a more rapid pathogenicity test.

Because of its dimorphism, opinions differ as to the classification of *Histoplasma capsulatum*, though it is generally accepted that it closely resembles the genus *Sepedonium*, and should be placed with it in the Moniliaceæ.

Epidemiology.

Epidemiological problems are largely unsolved. The organism has been isolated from the soil (Emmons, Morland and Hill, 1949, and Ajello and Zeidberg, 1951), and is so resistant that it may live there for long periods. Human susceptibility to infection is probably not high, as laboratory infections have not occurred and a familial incidence is unusual. The infection is known to occur naturally in dogs (De Monbreun, 1939), in cats (Emmons, 1949), in rats and mice (Emmons and Ashburn, 1948), and in the skunk (Emmons, Morland and Hill, 1949). These, however, may not be reservoirs of infection, in the usual sense of the term, but merely incidental victims like human beings.

The portal of entry is probably in most cases through the skin or by the alimentary tract, as lesions are often present on the mouth, pharynx or larynx for many months before fever and other indications of systemic infection develop. However, the disease has sometimes appeared to be confined to the lungs, suggesting the respiratory tract as a possible portal of entry.

Pathology.

Almost any organ may be found involved at autopsy. The gross appearance of lesions in internal organs may resemble that of tuberculosis. Involvement of the liver, spleen and bone marrow is frequent in the generalized phase of the disease. Microscopic examination shows a variable but sometimes severe destruction of tissue, with replacement or encapsulation by a proliferation of epithelioid cells, within which the organisms have multiplied to produce a striking and characteristic appearance. They may, however, also be found in the specific cells of the tissue concerned—the epithelial cells of the intestine, adrenal cortical cells, parenchymal cells of the liver, prickle cells of squamous epithelium.

Clinical Features.

The clinical features vary greatly, but in the majority of cases local lesions occur first on the skin or at mucocutaneous junctions, with later generalization. In infants the infection has usually been generalized, with no local lesions. The primary lesions may be mistaken for new-growth, tuberculosis, syphilis, or other granulomata. They are indurated and later ulcerated, but surrounding inflammation is not severe.

When generalization occurs, there are asthenia, anorexia and a moderate, irregular fever. Considerable weight is lost, the liver and spleen usually become palpable, and there is often generalized enlargement of the lymph nodes. Alimentary disturbance is frequent. The blood picture may remain normal, but anæmia and moderate leucopenia are not unusual. Steady downhill progress is the rule, although recovery has been reported (Wheeler, Friedman and Saslaw, 1950).

On the other hand, it seems possible that many infections may be self-limited, for disseminated pulmonary calcification, a condition in which multiple calcareous deposits up to one centimetre in diameter are scattered throughout the lungs and hilar regions, occurs mainly in the central States of America, the area from which most cases of histoplasmosis have been reported. Radiologically the appearances do not resemble those of tuberculosis, and tuberculin sensitivity is absent, while the majority of subjects have shown sensitivity to histoplasmin. The specificity of this reaction is, however, doubtful, and the significance of these findings is therefore obscure (Pinkerton, 1949).

Diagnosis.

The diagnosis is essentially a question of clinical pathology, and the condition is therefore least likely to be overlooked when the physician and clinical pathologist work in close association. Otherwise it is likely to be made only when the pathologist, alive to the possibility, incidentally

finds the organism in sections of biopsy or post-mortem material.

The organisms are usually abundant in sections, and their intracellular location and characteristic morphology make their identification relatively easy. Even more confident identification can be achieved by culture from biopsy material. In generalized infections without local lesions the organisms may be found by bone marrow biopsy or puncture, and they have occasionally been seen in monocytes or neutrophile cells in blood smears. They have also been discovered in a few cases by culture of stools or sputum (Parsons and Zarafonetis, 1945).

Animal inoculation has not been used in diagnosis in the past, but the inoculation of mice or of the chorio-allantoic membrane of the chick may prove useful in the future. The histoplasmin test seems to give both false-positive and false-negative results, and is not at present considered to be reliable.

Treatment.

No treatment of proven value is known. When the primary lesion is seen at an early stage, excision seems advisable and may possibly be curative. In the case reported by Johnson and Derrick, the patient was alive and well four years after excision of the lesion. However, the disease evolves so slowly in some cases that recurrence was still a possibility. Many chemotherapeutic agents have been used, and cure has been claimed after use of sulphadiazine (Curtis and Greken, 1947) and "Neostam" (Parsons and Zarafonetis, 1945); but in other cases these have produced no benefit.

Report of a Case.

Mr. B., aged fifty-two years, a farmer and meatworker, was admitted to hospital on August 16, 1950, with an ulcer of the left tonsil of six months' duration. The family history was not relevant. The patient had worked in Townsville as a meatworker from 1924 to July, 1949, since when he had lived in a suburb of Brisbane and worked as a farmer and as a boner at the Brisbane abattoir. He admitted a syphilitic infection twenty-eight years previously, and also gave a history of filaria twenty years previously and an appendicectomy eight years previously. He had had an ulcer in the throat three or four years earlier. This had cleared up, and his recent symptoms had commenced with increasing soreness of the pharynx six months before his admission to hospital. Ulceration had appeared and steadily increased. He had also suffered from a burning pain in the upper part of his abdomen after eating. He had lost two stone in weight in twelve months.

Physical examination of the patient revealed ulceration of the left tonsil, but otherwise no abnormality. A test meal examination revealed hypochlorhydria. An X-ray examination of the chest showed no lung lesion. Radiological examination with a barium bolus revealed delay at the lower end of the œsophagus, associated with some spasm and irregularity. X-ray examination after a barium meal revealed no lesion in the stomach, pylorus or duodenum. An œsophagoscopic examination revealed an ulcerated area on the right antero-lateral aspect of the œsophagus at 40 centimetres from the upper alveolus. It did not appear indurated, and there was no evident stricture. Biopsies taken from the ulcers of the tonsil and œsophagus were reported as showing "infective lesions of unidentified nature". The Wassermann test produced a negative result, and no acid-fast bacilli were found in the sputum.

Treatment with streptomycin produced no improvement, and he was discharged to the out-patient department. He was readmitted to hospital two months later, after an attack of colicky epigastric pain. On examination, the abdomen was tender and rigid, and a provisional diagnosis of perforated peptic ulcer was made. He refused operation, and was treated conservatively. The following day his condition had improved considerably, but he complained of difficulty in swallowing. Œsophagoscopic examination revealed an area of ulceration just above the cardia. A biopsy was taken, and reported as showing "epithelial hyperplasia probably now malignant". An X-ray examination of the chest showed no evidence of tuberculosis. X-ray examination with a barium meal revealed a normal stomach and duodenum. Examination with a barium bolus revealed narrowing of the œsophagus just above the level of the diaphragm. Malignant disease could not be excluded. The Wassermann test produced a negative result. The blood contained 10·5 grammes of hæmoglobin per 100 millilitres.

Because of the difficulty in swallowing, a gastrostomy was performed, the patient surviving the operation. He continued to lose weight slowly. Two months after the gastrostomy, œsophagoscopy was again carried out. The area of the œsophagus 40 centimetres from the incisor teeth appeared narrowed and acutely ulcerated over the whole circumference. No tumour formation or induration was seen. A piece was removed for biopsy, and reported as "heavily infected simple ulcer with no sign of malignancy". A swabbing from the uvula yielded a growth of coagulase-positive staphylococci, β-hæmolytic streptococci and micrococci.

His general condition did not improve, but after six months in hospital he was allowed to go home. He was readmitted three weeks later, because of discharge of food around the margins of the gastrostomy tube. Four weeks later another œsophagoscopy was carried out, and a biopsy was taken and reported as showing a "necrotic ulcer almost certainly tuberculous". Because tuberculosis in the absence of a pulmonary lesion appeared unlikely, a further opinion on the biopsy sections was requested, and the presence of *Histoplasma capsulatum* in the lesions was discovered. Culture of material from the tonsil confirmed the diagnosis.

Treatment with sulphadiazine, "Fouadin" and "Atebrin" brought no improvement. He remained anæmic and underweight. The ulcerating granulomatous lesion of the uvula and pharynx extended slightly while he was under observation. A biopsy from the area of indolent ulceration at the margin of the gastrostomy wound yielded *Histoplasma*. The organisms were not at first found in material obtained by bone marrow puncture, but a culture was obtained from a later puncture, although no organisms could be seen in smears.

A histoplasmin test was performed by Dr. J. I. Tonge with histoplasmin kindly supplied by the Communicable Diseases Centre in Atlanta, Georgia, United States of America. With dilutions of 1 in 1000, the skin test gave a negative result at twenty-four and forty-eight hours. Two days later a skin test was performed with a dilution of 1 in 100, but this also gave a negative result.

He was discharged from hospital, unimproved, seven months after admission, and unfortunately did not report for further observation or tests. He died under the care of a private physician a month after leaving hospital and almost two years after the first appearance of the pharyngeal ulceration. It is possible that the ulcer in the throat, which healed three or four years earlier, may have been the initial lesion, in which case death occurred five to six years after onset of the disease.

Mycological Investigation.

In tissue sections and smears, the organisms appeared in the typical yeast-like phase (Figures I and II). Budding was seen in Bauer stained sections, the budded cells in some cases hanging together to produce chains of three or four cells. The outer capsule was Bauer-positive, but only the inner capsule was Gram-positive in Gram-Weigert stained sections.

Growth of the organism was obtained on Sabouraud's medium incubated at 30° C. for twenty days. No growth was obtained on blood agar or in glucose broth at either 30° C. or 37° C. The growth consisted of sparse radiating hyphæ in the surface layer of the medium, with apparently no aerial mycelium. On subculturing, a colony was obtained with fluffy white aerial mycelium and fine sparse hyphæ in the substrate. After several weeks, the mycelium in the substrate became quite dark, and then the aerial mycelium slowly developed a pale yellowish-brown hue.

With small transplants growth was exceptionally slow, but it was much more rapid when larger portions were used, particularly when the inoculum contained substrate mycelium.

The microscopic characteristics of the fungus were studied from cornmeal agar slide cultures. The mycelium, conidia and chlamydospores (Figures III and IV) were found to agree in essentials with the descriptions summarized in an earlier section of this paper, and with a type culture of *Histoplasma capsulatum* kindly supplied by Dr. C. W. Emmons, although the local strain was darker and the chlamydospores smaller and produced less readily than in the American strain.

The local strain was grown successfully on a variety of media. It grew best on plant and animal extract media,

though it also grew readily on malt agar and Czapek's agar. Spore production varied on the media tried, and it was found that beef-extract agar appeared to promote the growth of conidia, while chlamydospores were prolific on potato-dextrose agar.

As the organism failed to grow in the yeast-like phase, pathogenicity tests were made with three and six weeks old cultures of the mycelial phase on Sabouraud's agar, washed off with five millilitres of sterile physiological saline and agitated to release spores and fragments of mycelium. Inoculations were made on the chorio-allantois of ten to thirteen day old chick embryos and intraperitoneally into mice. No lesions which could be regarded as specific developed, although *Histoplasma* was recovered in culture from first passage membranes and six mice; no growth was obtained on culture from second and third passage membranes. These findings are in accord with earlier observations that infectivity of the mycelial phase is low.

Comment.

This case conforms in its clinical features with the usual pattern seen in histoplasmosis. The delay in making the diagnosis emphasizes what has already been said about cases being overlooked. Here the organisms were, as usual, very numerous, the reticulo-endothelial cells being given a finely stippled appearance even under the low-power objective, and, as can be seen from Figure I, appearing in characteristic and easily recognizable form under the high-power objective. Nevertheless, because the nature of the condition had not been suspected clinically, the presence of *Histoplasma* in the sections was overlooked. It is probable that the same mistake has been made more than once in the past, as in America; it seems most unlikely that this is the first case of visceral histoplasmosis to have occurred and to have been investigated by biopsy in Australia.

Nothing can be said, in the present state of our ignorance, about the possible source of infection.

Summary.

The subject of histoplasmosis is reviewed. A fatal case is described. This is the second so far recorded in Australia, but the first from which *Histoplasma capsulatum* has been isolated in culture.

Acknowledgements.

We wish to thank Dr. G. H. Brandis, who had the patient under his care, for his permission to publish the case, and Dr. I. M. Mackerras, of the Queensland Institute of Medical Research, and Professor A. J. Canny, of the Department of Pathology, University of Queensland, for their assistance and advice in the preparation of the paper.

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Legends to Illustrations.

FIGURE I.—Section of lesion of pharynx, showing *Histoplasma capsulatum* in reticulo-endothelial cells. (Hæmatoxylin and eosin, × 1000.)

FIGURE II.—Fresh smear of biopsy material, showing the yeast-like bodies in a macrophage. (Giemsa, × 1538.)

FIGURE III.—Slide culture of *Histoplasma capsulatum*, showing mycelium and the small conidia. (Unstained, × 380.)

FIGURE IV.—Large, tuberculate chlamydospores from a slide culture. (Unstained, × 380.)

A CASE OF CARCINOMA "IN SITU" REMOVED DURING GASTRIC RESECTION FOR CHRONIC ULCER.

By RUTH OSMOND,
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THE patient was a man, aged sixty-four years, who had first been admitted to hospital in 1949 with symptoms of a chronic gastric ulcer, the presence of which was confirmed by fluoroscopic examination with the use of barium. Early in 1951 the possibility of a malignant change in the ulcer was suspected, owing to his progressive weight loss. He was extremely emaciated, weighing six stone nine pounds on his admission to hospital in August, 1951. The report of the fluoroscopic examination on May 18, 1951, was as follows: "Destruction of mucosal pattern along the lesser curvature near the incisura extending down towards the pylorus with several filling defects—the appearance suggests neoplasm." A gastroscopic examination performed on July 26, 1951, led to the following report: "There is an infiltrating lesion on the posterior wall of the pyloric antrum." However, at operation on August 4, 1951, when partial gastrectomy was performed, no definite evidence of malignant disease was seen, although a small area of raised mucosa just above the pylorus was noted, in addition to a chronic ulcer on the lesser curvature.

Macroscopic examination of the resected portion of the stomach revealed a circular ulcer, three-quarters to one centimetre in diameter, resting on a thinned piece of stomach wall along the lesser curvature. The surrounding tissues were thickened and puckered. Just above the pylorus an area of thickened, rough mucosa measuring 1·0 by 1·5 centimetres with a very shallow central depression was noted. After fixation, this thickened area was separated from the ulcer by a distance of five centimetres. The surgeon considered that when the organ was lax, as seen at operation, the distance was considerably greater than this. The destruction of normal mucosal pattern referred to in the X-ray report was observed over the major portion of resected tissue.

Histological examination of sections revealed, firstly, a chronic gastric ulcer with an infected necrotic surface and basal fibrosis which extended into the surrounding muscle. Examination of sections of the area of raised mucosa referred to in the description of the macroscopic findings revealed a very early adenocarcinoma of the stomach, which did not invade beyond the *muscularis mucosæ*. The lesion was spread out along the surface of the raised patch, not affecting every gland, so that two or three normal glands could be seen in juxtaposition with those in which the histological changes could be interpreted only as malignant. It is notable, too, that occasionally the more superficial parts of the glands were obviously malignant, while the deeper parts were histologically normal. These appearances

suggest that the mode of origin of the carcinoma was not by peripheral spread from one glandular focus, but rather multifocal, with numerous discrete independent glands undergoing malignant change simultaneously. The other characteristic histological features can best be appreciated by reference to the illustrations. The normal regular architecture of the glands is altered, showing variations in size and shape, papillary infoldings and other slight irregularities, as seen in Figure II. The cells lining the abnormal glands are conspicuous for their hyperchromatic nuclei and the frequency of mitoses, which are seen at all levels of the glands, while in places, as shown in Figure III, the irregular-shaped cells and nuclei are completely disorientated in arrangement. From Figure I, which shows a general view of the lesion, it can be seen how superficial is the entire lesion, the *muscularis mucosæ* being invaded at one point, but nowhere penetrated. In the affected area of mucosa the capillaries are dilated and engorged, and deep to the muscularis there is a similar engorgement of vessels. Chronic inflammatory cells are not conspicuously increased, nor is there any true ulceration in this area, although there is some desquamation of the surface epithelial cells which normally line the ridges between the gastric pits.

Examination of further sections taken between the carcinoma and the ulcer showed histologically normal gastric mucosa, as did that of other sections of mucosa taken where the normal mucosal pattern was not present.

Comment.

It is evident, therefore, that this is one of those rare cases in which there is the "fortuitous coexistence of carcinoma and simple ulcer separate from each other", as referred to in two instances by Willis (1948). Moreover, it can be seen that this is an extremely early carcinoma of the stomach in the non-invasive stage—carcinoma *in situ* of Mallory (1946). The prepyloric region, which is the site of predilection for this type of lesion, was again the site of origin in this case.

Acknowledgements.

I wish to thank Dr. A. Hobbs, honorary surgeon of the Royal Adelaide Hospital, for permission to use the clinical records, and Mr. Bonython Fuller, of the Institute of Medical and Veterinary Science, for the preparation of the photomicrographs.

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Legends to Illustrations.

FIGURE I.—General view of the lesion, which shows its superficial situation. (Hæmatoxylin and eosin stain, × 10.)

FIGURE II.—Portion of the carcinomatous lesion showing atypical glandular structure. (Hæmatoxylin and eosin stain, × 150.)

FIGURE III.—The irregular size, shape and arrangement of the cells with a mitotic figure. (Hæmatoxylin and eosin stain, × 530.)

A CASE OF HISTOPLASMOSIS.

By J. B. DOWE, COLIN S. GRAHAM, SHIRLEY BROWN, and E. BEATRIX DURIE,

From the Institute of Medical Research, the Royal North Shore Hospital, Sydney.

THE first known case of histoplasmosis in Australia was recorded by D. W. Johnson and E. H. Derrick (1948). The patient, a man of fifty-one years, was a farmer in the Orange district of New South Wales, and had never been outside Australia. He complained of a small tumour of the chin; the fungus was found in histological sections made from this lesion, but no cultures were made. The patient remained apparently free from the disease for four years after the excision of the lesion. A second case occurred in Queensland in 1951; this is reported in full in this issue of THE MEDICAL JOURNAL OF AUSTRALIA.

Through the kindness of Dr. E. H. Derrick and Mrs. R. Powell, of the Queensland Institute of Medical Research, several sections of tonsillar tissue from this patient were sent to one of us (E.B.D.) in September, 1951. Cultures of *Histoplasma capsulatum* had also been sent to us by Dr. Orda Plunkett, of California, and by Mrs. Powell, of the Queensland Institute. The experience thus afforded was of considerable help in the diagnosis of the case reported below.

Clinical Record.

E.G., a man, aged thirty-seven years, was first examined in the out-patient department in January, 1952. He complained that he had first noticed involuntary variations in the pitch of his voice fourteen months before. Thereafter his voice became slowly but progressively more husky and difficult to produce, until when he was first examined he could talk only in a strained, forced, hoarse whisper. There was no pain, dyspnœa or dysphagia. He had paroxysms of coughing in the morning with the production of some mucopurulent sputum and followed occasionally by vomiting. He said that he had bitten the right side of his tongue six weeks before. This lesion had failed to heal. It was not painful, but it did at times itch. This man had enlisted in the army in 1942. Prior to 1943 he had not left Australia. From 1943 to January, 1946, he served for varying periods in Dutch New Guinea, the Schouten group of islands, and in Borneo. In 1944 he had his first "feverish attack". These attacks have recurred intermittently. They were investigated from time to time, but apparently they remained undiagnosed.

On examination of the patient an ulcer was found on the right border of the tongue, at the junction of the anterior and middle thirds. This ulcer had the form of a fissure, approximately 15 millimetres in length, four millimetres in width and five millimetres in depth. There was a small yellow slough on its floor, and the walls were irregular. There was slight induration of the tissues in front of and round the ulcer. There seemed to be little vascular reaction around this lesion.

Indirect laryngoscopic examination showed a superficial, dirty white area of ulceration extending from the left ventricular fold down over the left vocal cord. This vocal cord was irregularly eroded and fixed in the mesial position. There was slight œdema of the left arytenoid region and aryepiglottic fold. These observations were confirmed by direct laryngoscopic examination, when the ulceration was seen to extend into the subglottic region for a distance of approximately 10 millimetres. A piece of tissue was removed from the larynx on January 15 and the sections were examined by Dr. C. S. Graham, who suggested the diagnosis of histoplasmosis, and whose report was as follows:

> Macroscopic: The specimen consisted of two small pieces of tissue. Both were embedded. Microscopic: Both these pieces of tissue showed a chronic inflammation which is unusual in that there are very large numbers of epitheloid cells. There is no tubercle formation or new growth. Scattered through the depth of the section, from the epithelium to the cut edge, are numerous small oval bodies with a staining central core surrounded by a clear outer zone (? capsule). Morphologically these resemble histoplasma; and they give the staining reactions for fungi. The fact that these organisms are so deep in the tissue, together with the unusual type of inflammatory reaction, suggests that these are the causative organism. Their exact identity should be established by culturing them.

The appearances are shown in Figure I. *Histoplasma capsulatum* was subsequently grown from the lesion on the tongue.

After the biopsy the œdema of the arytenoid regions and left ventricular fold increased to such an extent that it became impossible to see the ulcerated area by indirect laryngoscopy. The patient was admitted to hospital for observation on February 8. Apart from his history of feverish attacks there was no evidence of systemic disease. No enlargement of the liver or spleen was detected; X-ray examination of the chest showed no abnormality. No malaria parasites were found and no organisms were

ILLUSTRATIONS TO THE ARTICLE BY HARRY M. WINDSOR

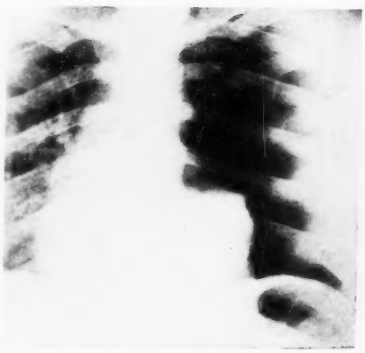


FIGURE II.

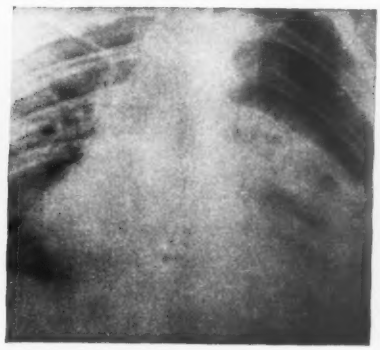


FIGURE III.

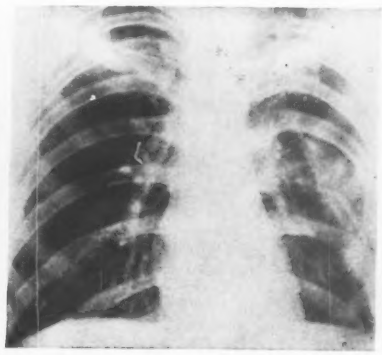


FIGURE IV.

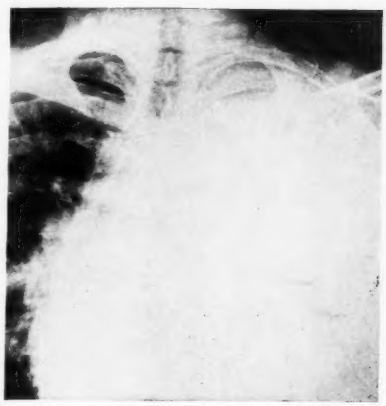


FIGURE V.

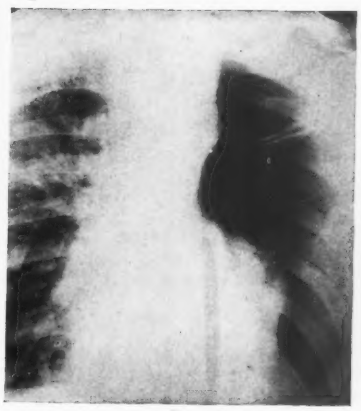


FIGURE VI.

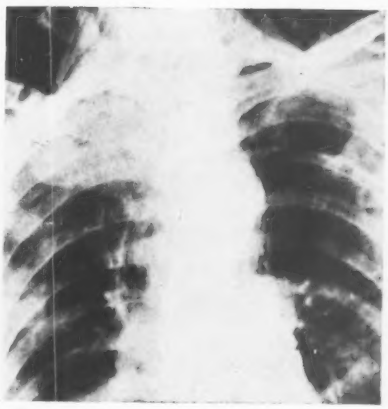


FIGURE VII.

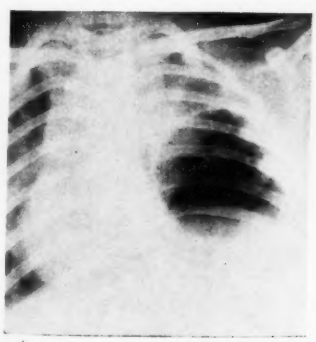


FIGURE VIII.

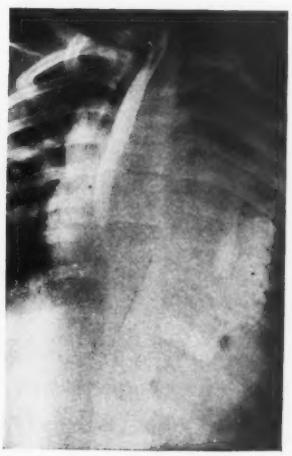


FIGURE IX.

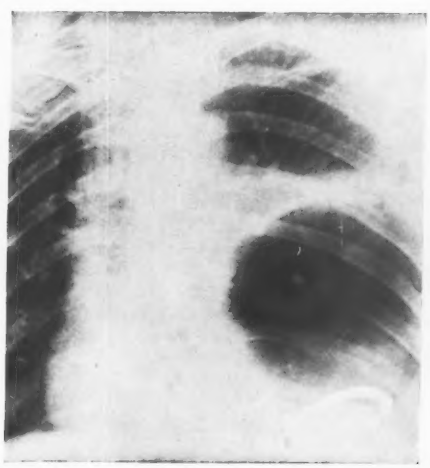


FIGURE XI.

ILLUSTRATIONS TO THE ARTICLE BY J. A. INGLIS AND R. E. POWELL.

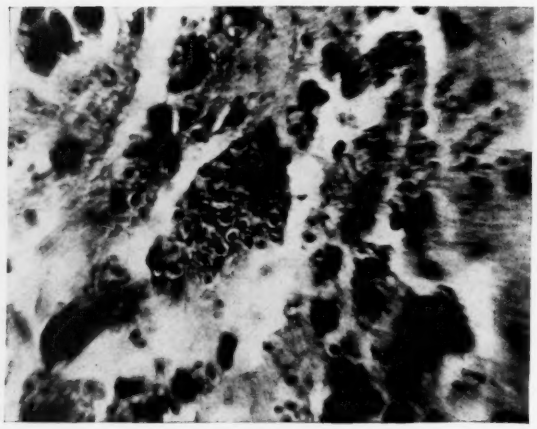


FIGURE I.

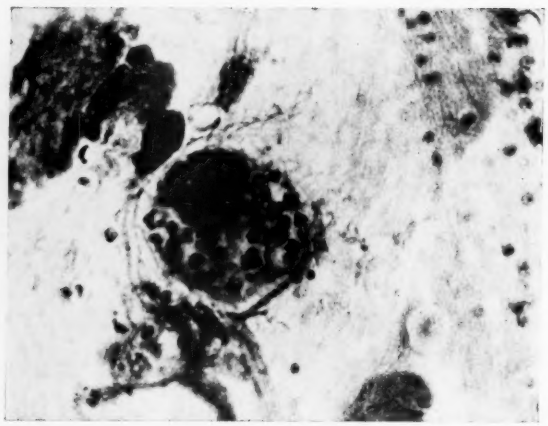


FIGURE II.

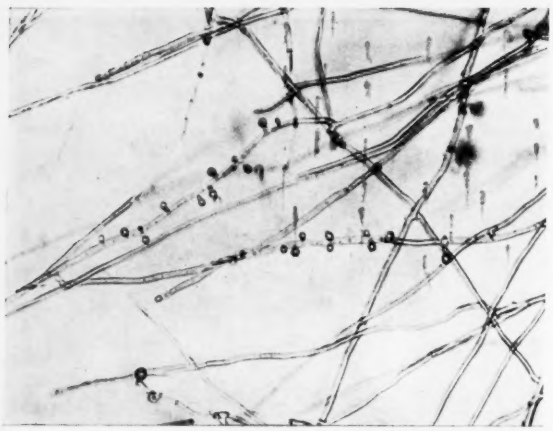


FIGURE III.

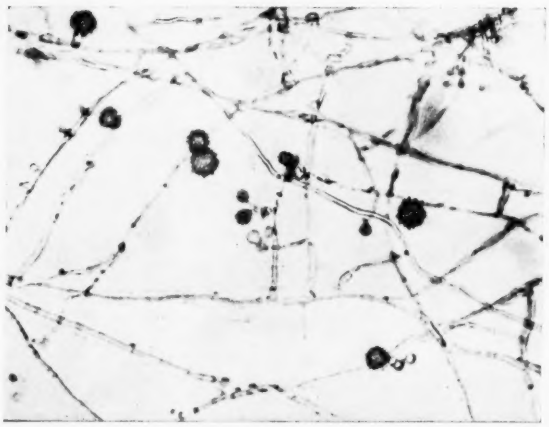
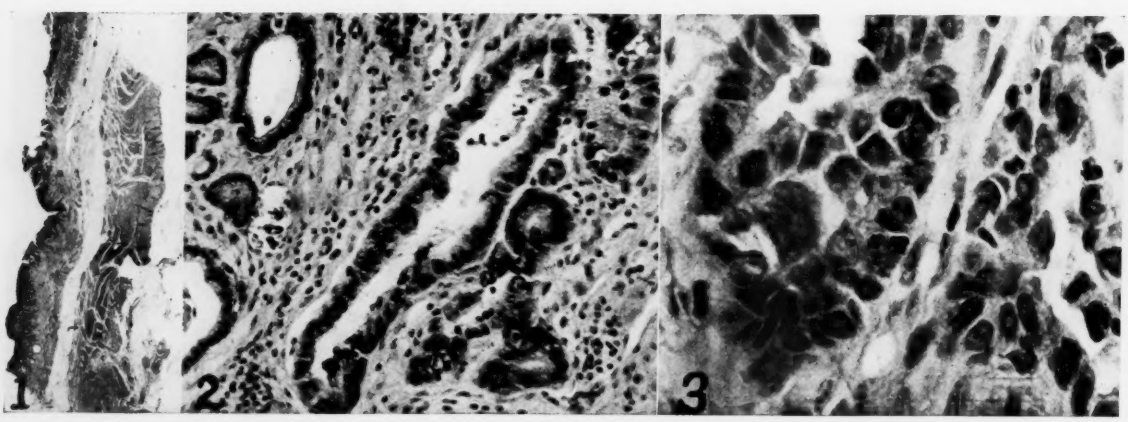


FIGURE IV.

ILLUSTRATIONS TO THE ARTICLE BY RUTH OSMOND.



ILLUSTRATIONS TO THE ARTICLE BY J. B. DOWE, COLIN S. GRAHAM, SHIRLEY BROWN, AND E. BEATRIX DURIE.

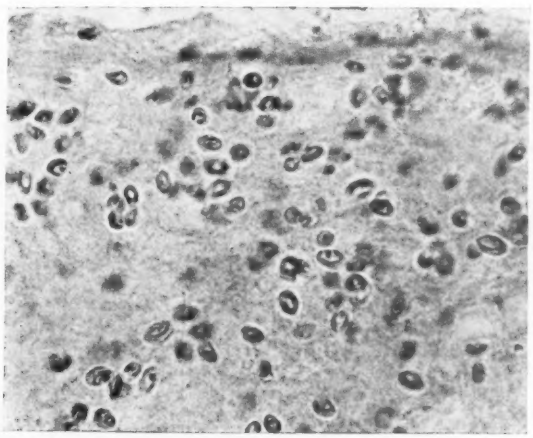


FIGURE I.

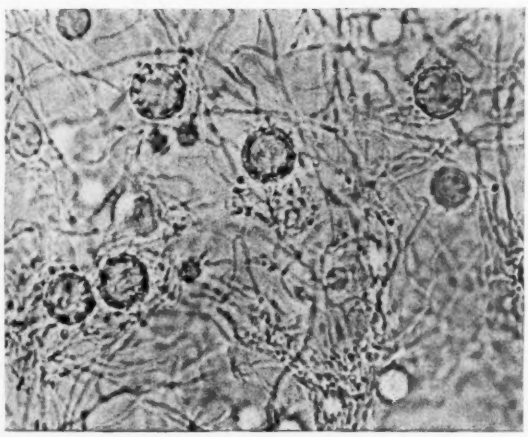


FIGURE II.

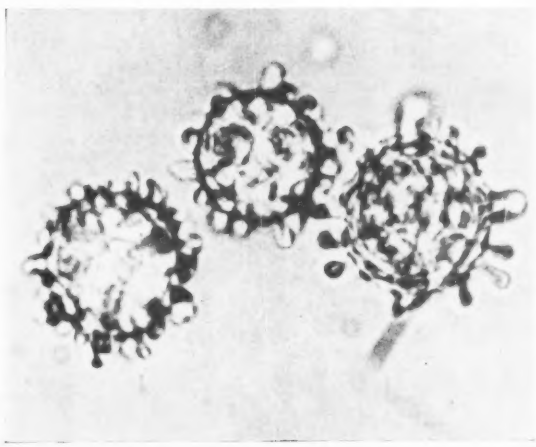


FIGURE III.

ILLUSTRATIONS TO THE ARTICLE BY IAN F. POTTS.

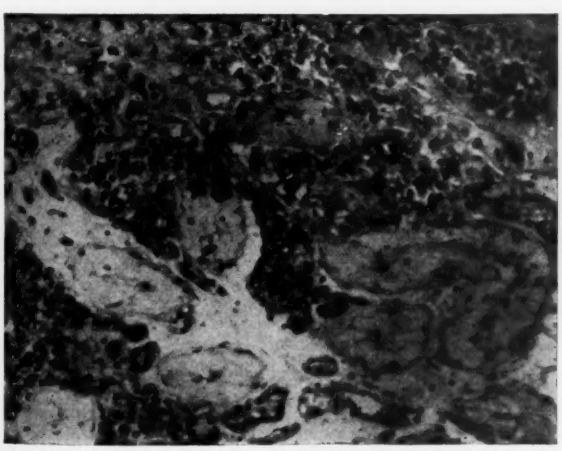


FIGURE I.

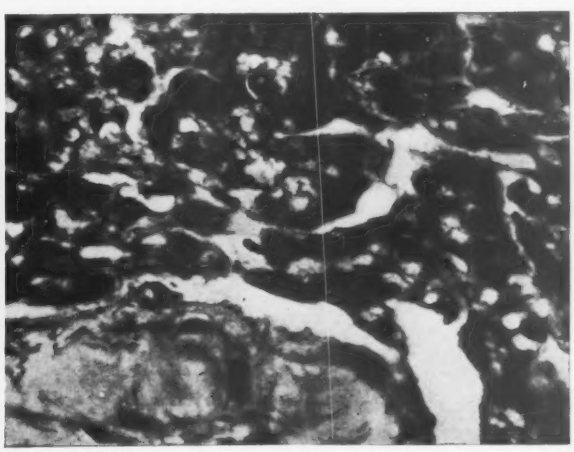


FIGURE II.

ILLUSTRATION TO THE ARTICLE BY MICHAEL ELYAN AND R. A. RIMINGTON.

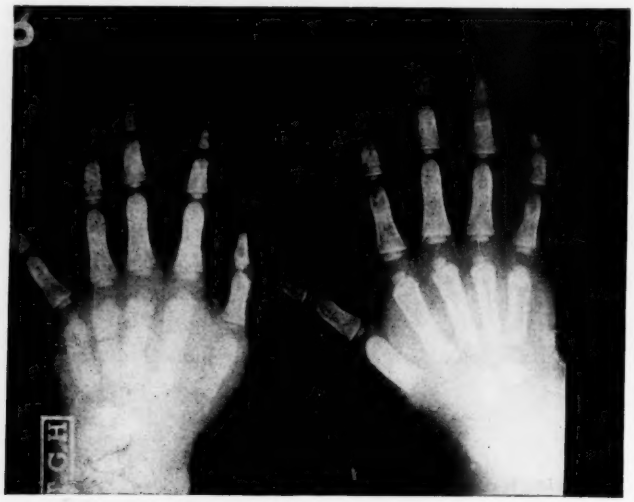


FIGURE I.

ILLUSTRATIONS TO THE ARTICLE BY R. A. MONEY.

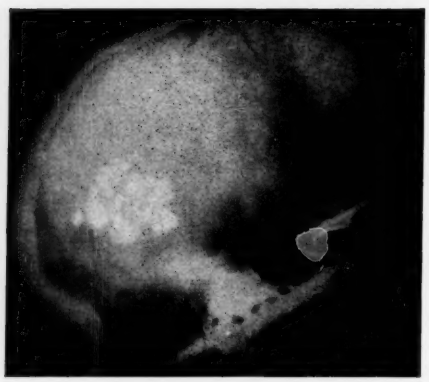


FIGURE I.

FIGURE II.

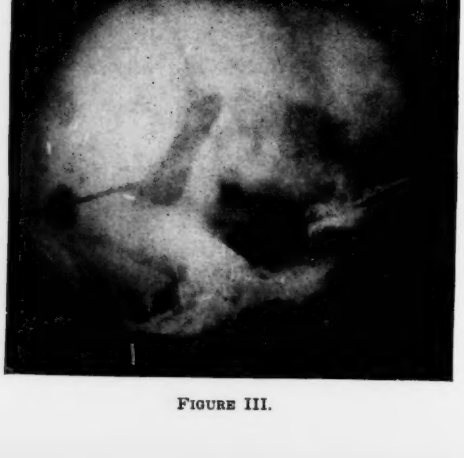


FIGURE III.

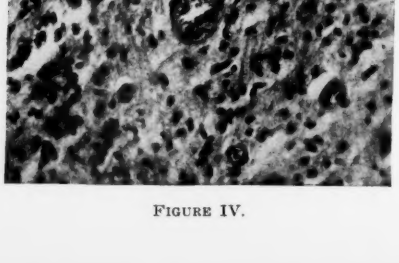


FIGURE IV.

grown from successive blood cultures. The blood count was normal and has remained so up till the present time. He was treated in the first instance with "Atebrin". A total of 3·5 grammes was given over a period of fourteen days. Mepacrine methonosulphonate (0·06 gramme daily) was subsequently given by intravenous administration for five days.

On the suggestion of Professor R. H. Thorp, of the Department of Pharmacology, University of Sydney, the patient has, during the past two months, been under continuous treatment with sulphadiazine, six grammes daily. The ulcer on the tongue has decreased slowly and now appears healed. The patient's voice is stronger, and indirect examination of the larynx shows a definite improvement. The œdema is much diminished, and the left vocal cord, though still irregular, shows no white erosion. However, it is too soon to say what the outcome will be. The patient's skin reacts to histoplasmin, but skin tests performed on his wife and two children have so far elicited no reaction.

Identification of the Fungus.

The material used was tissue fluid obtained from the base of the ulcer of the tongue by syringe and needle. Cultures on Sabouraud's medium and on blood agar were incubated at 22° C. and at 37° C.

Small, white, fluffy colonies appeared on Sabouraud's medium at 22° C. in fourteen days and later developed a rosette-like appearance; the colour gradually darkened to buff and then to light brown. A culture mount made at fourteen days showed mycelium with branching septate hyphæ-bearing spores, some of which were small, round or pear-shaped, while others were large tuberculate chlamydospores (see Figures II and III). The presence of these two types of spore is characteristic of *Histoplasma capsulatum*. The organism grew well on blood agar but persisted in its mycelial form for many weeks. In cultures on blood agar slopes sealed with paraffin wax the yeast phase developed after some months.

Subcultures were compared with those of a stock culture of *Histoplasma capsulatum* and also of a culture of Sepedonium, both obtained from Dr. Plunkett, of the University of California. Sepedonium is a non-pathogenic fungus, resembling Histoplasma in having tuberculate chlamydospores, but distinguished from it by a much more rapid rate of growth and other properties.

Review of the Literature.

Darling (1906, 1908) described peculiar coccus-like organisms in smears and sections taken at autopsy from three patients who had died in Panama in the Canal Zone. The clinical features (splenomegaly, irregular pyrexia and anæmia), as well as the microscopic appearances of tissue sections, resembled those of kala-azar. Thinking, therefore, that the new organism was a protozoon, Darling called it "*Histoplasma capsulatum*". Twenty years later a similar case was described by Riley and Watson (1926). However, it was not until 1934 that the true nature of the infective agent was shown, when De Monbreun succeeded in growing the causative fungus from the blood-stream and spleen of a five months old infant. The diagnosis in this case had been made before death by Dodd and Tompkins (1934).

Until 1944 only 71 cases of histoplasmosis had been reported; these were reviewed by Parsons and Zarafonetis (1945) together with seven additional cases encountered by them. The impression obtained at that time was that the disease was uniformly fatal. However, surveys made by Christie and Peterson (1946) and by Palmer (1946) showed a relationship between histoplasmin skin sensitivity and pulmonary calcification in tuberculin-negative persons. The actual infections causing these residual lesions have seldom been observed; the hypothesis that they are due to *Histoplasma capsulatum* rests on indirect evidence. Wheeler, Friedman and Saslaw (1950) were able to find only five cases of proved infection with illness in patients who subsequently recovered. They reported two further instances of histoplasmosis with apparent complete recovery occurring in two cousins. In each case *Histoplasma capsulatum* was grown on blood culture; in one instance the organism took five weeks to grow on laboratory media. Conant *et alii* (1947) stated that histoplasmosis had been found in Central America, South America, the United States, England, the Philippines, Java, and South Africa.

From its rarity it seems probable that the disease is of low infectivity. As to possible reservoirs of infection, De Monbreun, who was the first to recognize the disease in the dog, suggested that it might be transmitted from dogs to man (1939). Emmons (1950) stated that naturally occurring histoplasmosis had been proved in the dog, the brown rat, the roof rat, the domestic cat and the spotted skunk. Prior and Cole (1950) state that *Histoplasma capsulatum* has been recovered from samples of soil. In a study of the communicability of histoplasmosis they found that three of five dogs developed the infection while exposed to eight dogs with the naturally acquired disease. In a group of 25 human household contacts of dogs with active histoplasmosis there was no indication that any had active disease; nor was there any evidence of active histoplasmosis in any of the eight laboratory workers engaged in this study.

Summary.

A case of histoplasmosis is described, and a brief account of the literature is given. The diagnosis was confirmed by culture of *Histoplasma capsulatum*.

Acknowledgements.

We wish to thank Dr. W. Forbes, of the School of Public Health and Tropical Medicine, Sydney; Mrs. R. Powell, of the Queensland Institute of Medical Research, for checking the properties and identity of the fungus; and Mr. Woodward-Smith, of the Department of Medical Artistry, University of Sydney, for his skill and patience in making the photomicrographs.

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Legends to Illustrations.

FIGURE I.—Tissue from the larynx, taken by biopsy, showing the yeast-like bodies of *Histoplasma capsulatum*. The stain, a modification of Bauer's, is designed to show the fungus rather than the tissue structure. (Hotchkiss and McManus stain, × 1200.)

FIGURE II.—Culture mount showing *Histoplasma capsulatum* in the mycelial phase, after fourteen days' incubation on Sabouraud's agar at 22° C. Small smooth round conidia are shown as well as the characteristic tuberculate chlamydospores (× 500).

FIGURE III.—Culture mount under higher magnification showing tuberculate chlamydospores (× 1500).

SYMPTOMLESS METASTASIS TO TESTIS FROM CARCINOMA OF THE PROSTATE.

By IAN F. POTTS, M.S., F.R.C.S. (England),
Sydney.

SECONDARY TUMOURS of the testis from any source are rare, and to date only four cases of secondary tumours of the testis from the prostate have been described (Semans, 1938; Helfert and Pinck, 1944; Baird and Hare, 1948; Bradham, 1951). In view of the number of patients with carcinoma of the prostate undergoing orchidectomy, this appears an unusually low figure and justifies this report of a further case.

Clinical Record.

C.H., aged sixty-eight years, first presented to the urology out-patient department at Sydney Hospital in November, 1949. He complained of difficult and frequent micturition, dribbling and strangury of two months' duration. He stated that his urinary stream had been poor for one year and that he had experienced one attack of acute retention of urine in July of that year. On examination his urine was clear, and examination of the patient *per rectum* revealed an enlarged, stony-hard, irregular prostate, which was clinically judged to be carcinomatous. He was given stilbœstrol, five milligrammes three times a day. The serum acid phosphatase content was 3·1 Bodansky units, and the blood sedimentation rate was 32 millimetres in one hour (Westergren).

His urinary symptoms were greatly relieved and his prostate softened considerably, but it remained hard on the edges. Four months later he complained of very sore breasts, which were enlarged more than is usual with œstrogen therapy. For this reason he was tried variously with dienœstrol and ethinyl œstradiol without amelioration of the breast changes.

In January, 1951, the serum acid phosphatase content was 2·6 King-Armstrong units.

In May, 1951, his general health was good except for the breast changes and some nocturnal cramps in the legs, which were relieved somewhat with vitamin *E*.

As he had appeared to have reached a refractory state to œstrogen therapy, and as his breasts were causing considerable discomfort, bilateral orchidectomy was advised. In October, 1951, under general anæsthesia, a bilateral subcapsular orchidectomy was performed through a transverse incision at the base of the scrotum. The testes were the atrophic organs usually found after prolonged œstrogen therapy. No nodules were palpated or seen in the bodies of the testes, which were enucleated without difficulty. The scrotum was closed with drainage. The serum acid phosphatase content was now 4·0 King-Armstrong units. X-ray examination of the bony pelvis and the lumbar part of the spine revealed possible early secondary deposits in the fifth lumbar vertebra and a rounded shadow over the left renal area. X-ray examination of his chest revealed no abnormality.

The following day he volunteered the information that his breasts were painless. He was discharged from hospital to continue stilbœstrol therapy. The pathological report on the removed testes by Dr. R. Finlay-Jones was as follows:

> Adenocarcinoma with features consistent with a primary in the prostate is present in one specimen from the testis. There is atrophy of the testis and interstitial cells have not been found. The tubules have thick fibrous walls and there is no evidence of spermatogenesis. The changes are probably due to œstrogen therapy.

Because metastatic prostatic carcinoma was not suspected, the tissue was fixed and dehydrated by routine methods so that attempts to demonstrate acid phosphatase in the growth were unsuccessful.

At the patient's next examination in January, 1952, he stated that the pain in the breasts had recommenced two weeks after the operation and that he had experienced lumbar backache for the past month. Also two weeks after operation the left side of his scrotum had commenced to swell, and it had continued to do so gradually since and was tender. On examination he had still moderate gynæcomastia; the nipples were deeply pigmented and the breasts were nodular to palpation and tender. The penis was atrophic; the right side of the scrotum showed a normal post-operative result, but the skin overlying the left side was thickened with lymphatic œdema. There was a mass in this side of the scrotum measuring about 3·0 by 1·5 centimetres, which was stony hard, irregular and fixed to the overlying structures, and extended up the left cord. There were palpable hard discrete glands in both inguinal areas, and the external iliac glands were palpable. There was also slight lymphatic œdema of the right ankle. This was considered to be an accelerated growth of the metastasis, and he was referred for deep X-ray therapy. His general condition had deteriorated since operation and he had lost weight (ten pounds) and was anæmic.

Discussion.

Secondary tumours of the testis are very rare and only about 50 have been described. Willis (1934) describes secondary deposits from the opposite testis, the colon, the stomach, the small intestine (carcinoid), the pancreas, and the bladder, from malignant melanoma and from sarcoma of the thyroid. Dew (1925) describes a tumour of the left kidney which he considered metastasized to the testis by retrograde growth along the left spermatic vein. In a more recent study of 142 secondary tumours of the genito-urinary tract from 5000 autopsies, the testis was involved three times only (Klinger, 1951).

Of secondary tumours described from the prostate, the testes have been clinically normal in three cases if a hydrocele may be excluded (Semans, 1938).

In the present case the diagnosis of prostatic carcinoma was not firmly established by biopsy, but is judged to be correct for the following reasons: (i) because of the characteristic findings at the original rectal examination; (ii) because of the response to stilbœstrol; (iii) because of the presence of adenocarcinomatous tissue in the testis which resembled prostatic adenocarcinoma; (iv) because of the subsequent progress of the patient.

The absence of X-ray evidence of bony secondary deposits is in accord with previously reported cases (Baird and Hare, 1948; Bradham, 1951), and, as is well known, these may be extensively present without X-ray changes (Shackman and Harrison, 1948).

Thompson and Pilcher (1935) described a case in which extensive metastases were present, but the scrotal contents were normal clinically, and a metastasis was found in the epididymis only on histological examination. Semans's patient and Baird and Hare's patient also had deposits in the epididymes.

The serum acid phosphatase content was 1·5 King-Armstrong units in Helfert and Pinck's case, and in the present case it was 1·3 King-Armstrong units in January, 1952, and 4·0 units at the time of operation.

Carcinoma of the prostate may metastasize widely; rare sites of secondary deposits described are brain, spinal cord, eye, pancreas, gall-bladder, pericardium, pleura, adrenal, penis, skin and thyroid (Graves and Militzer, 1935). Such wide distribution necessitates hæmatogenous spread, and in the presence of lung deposits the opportunity of tertiary metastases.

In the present case the testes were enucleated easily with blunt dissection except at the *rete testis*, where sharp dissection was necessary, as is usual. At the *rete testis* the testicular artery enters the body of the testis, and a hæmatogenous implant is readily explained in this site.

With an isolated secondary deposit in the epididymis and none in the body of the testis (Thompson and Pilcher, 1935), in the presence of extensive pelvic lymph node deposits, retrograde lymphatic extension seems probable.

Dew's case (1925) of retrograde venous extension has already been quoted.

From the literature, therefore, it appears that all forms of secondary spread have occurred—namely: (i) retrograde venous extension, (ii) retrograde lymphatic extension, (iii) arterial embolism.

The present case is considered to be of the last-mentioned group. The patient's post-operative course implies extensive lymphatic deposits in the pelvis and an acceleration of the secondary deposit in the left side of the scrotum due to operative spilling. This was not present pre-operatively, and at that time he had no evidence of metastases in the chest, pelvic girdle or lymph nodes.

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Legends to Illustrations.

FIGURE I.—Low-power view. The atrophic fibrous seminiferous tubules are seen, and throughout the field extensive deposits of adenocarcinoma.

FIGURE II.—High-power view. Portion of one seminiferous tubule. The metastasis occupies most of the field.

A CASE OF COOLEY'S ANÆMIA IN QUEENSLAND.

By MICHAEL ELYAN, D.C.H.,

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AND

R. A. RIMINGTON,

Pathologist, Commonwealth Health Laboratory, Townsville, Queensland.

IT was thought, at one time, that Cooley's anæmia occurred only in children of Mediterranean origin. Since Cooley and Lee in 1925 first described their case, world literature has recorded many cases occurring in children of non-Mediterranean origin.

C. C. de Silva and C. E. S. Weeratunge (1951) reported four cases in Sinhalese children.

F. S. Mooney (1951) reported a case of Cooley's anæmia in a Maltese child.

The case here described is the first one reported in Queensland. The child, although born in Australia, is of Mediterranean parentage.

Clinical Record.

Despidia, aged twenty months, was admitted to the Townsville General Hospital on July 26, 1951. The parents, who were Cypriots, were unable to speak English, and no history was obtained at first.

On examination, the child was extremely pale and very languid. The malar bones were prominent, the facies was mongoloid. There was a pronounced second degree systolic murmur at the cardiac apex. The lungs were clear. The liver was enlarged to the level of the umbilicus and the spleen was easily palpable. Subsequently we ascertained the following history. The child was born in Australia, her birth weight being eight pounds ten ounces. She started to show anæmia at the age of seven months. There were no previous illnesses. She was later taken to the Brisbane Children's Hospital.

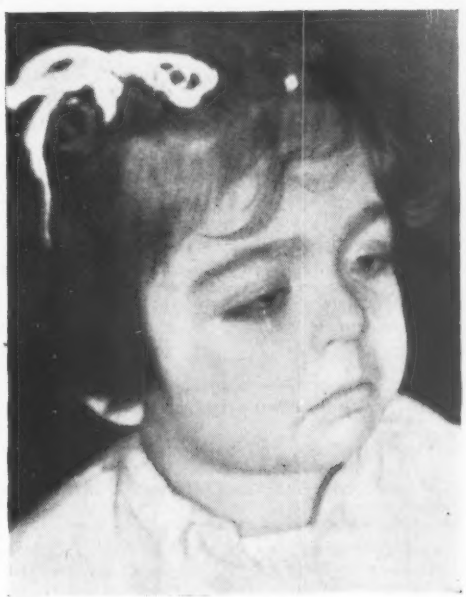

FIGURE II.

The hæmatological findings were as follows. The hæmoglobin value was 5·1 grammes per 100 millilitres, the red cell count was 2,600,000 per cubic millimetre, and the hæmatocrit reading was 16%. The mean corpuscular diameter was 7·5 μ, the mean corpuscular volume was 61 cubic μ, the mean corpuscular hæmoglobin was 18 $\gamma\gamma$ and the mean corpuscular hæmoglobin concentration was 32%. The platelets numbered 200,000 per cubic millimetre; reticulocytes were less than 1%. The leucocytes numbered 14,000 per cubic millimetre, 3% being band forms, 75% neutrophile cells, 2% eosinophile cells, 16% lymphocytes and 1% monocytes; there were 10 normoblasts per 100 leucocytes.

An erythrocyte osmotic fragility test showed that hæmolysis commenced in 0·44% sodium chloride solution and was complete in 0·24% sodium chloride solution. Anisocytosis and poikilocytosis were pronounced. Normoblasts were present; basophilic stippling was not observed, and target cells were few in number; but central pallor was present in the red cells. The bleeding time, clotting time, and clot retraction were normal. The child was of blood group O, Rh-positive. The serum bilirubin content was 0·2 milligramme per 100 millilitre, the urinary urobilinogen content was normal and no ova or cysts were found in the fæces.

In the sternal bone marrow, of 400 cells counted, 0·5% were myelocytes, 3% were metamyelocytes, 4·5% were

polymorphonuclear cells, 0·5% were eosinophile cells, 42% were lymphocytes, 1% were proerythroblasts, 48·5% were normoblasts; megakaryocytes were present.

There were no significant clinical, hæmatological or radiological findings in the mother, father, brother or two relatives.

X-ray examination of the patient's phalanges and metacarpals (Figure I) shows rarefaction of bones, resulting from an expanding marrow cavity. The photograph of the patient (Figure II) demonstrates the mongolian appearance of the patient with the high cheek-bones and slanting eyes.

On August 2 and on August 7 she received by transfusion 200 millilitres of packed red cells. Her hæmoglobin value rose to 10·2 grammes *per centum*. Her clinical condition showed pronounced improvement. She was much less lethargic and her colour was greatly improved. The liver and spleen rapidly receded, the former being palpable one inch below the costal margin and the latter only just palpable.

She was readmitted to hospital on September 11, 1951, when her hæmoglobin value had fallen to 6·3 grammes *per centum*. A further transfusion of 200 millilitres of blood was given, and the hæmoglobin value rose to 11·4 grammes *per centum*, with a corresponding improvement in her over-all clinical picture. She was then discharged from hospital.

On October 15, 1951, the hæmoglobin value was 5·7 grammes *per centum*. Examination of the blood film revealed many nucleated cells and target cells.

The child has been given transfusions at approximately two-monthly intervals. On each occasion the hæmoglobin value has risen from approximately 5 grammes to 11 grammes *per centum* before her discharge from hospital.

Summary.

A case of Mediterranean anæmia occurring in Queensland is reported, with hæmatological and radiological investigation.

After the diagnosis had been made at the Townsville General Hospital, we were informed that this child had previously been treated at the Children's Hospital, Brisbane.

Acknowledgements.

We wish to express our thanks to Dr. J. J. Sullivan, of the Pathological Department, Medical School, Brisbane, for his summary of the clinical and hæmatological findings in this patient and in several of the relatives, which were substantially similar to ours. We wish also to thank Dr. A. J. Metcalfe, Director-General of Health, Commonwealth Department of Health, for granting permission to Dr. Rimington to take part in the publication of this article.

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A CASE OF CALCIFYING EPENDYMOMA OF THE RIGHT LATERAL VENTRICLE.[1]

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MRS. L.J., aged thirty-five years, was admitted in a state of semi-coma into the psychiatry ward at Royal Prince Alfred Hospital under the care of Professor W. S. Dawson, on March 3, 1951. Her history was obtained from relatives and from a letter which she had from a doctor in Hobart. Apparently she had been well until January, 1951, when, whilst on a visit to Hobart, she began to complain of severe headaches in the occipital region. She consulted an ophthalmologist, who found hæmorrhages in both fundi and referred her to a physician; the latter found some hypertension—a blood pressure of 160 millimetres of mercury, systolic, and 110 millimetres, diastolic. This was thought to be the cause of her headaches. Under medical treatment, the blood pressure fell to 140 millimetres of mercury, systolic, and 100 millimetres, diastolic; but she still complained of considerable pain in her head, and became very distrait mentally. She then returned to Sydney, and as she came from a hypertensive family, it was recommended that she should be kept under observation, and that reassurance was all that was necessary for her "neurosis". Soon afterwards, she became somnolent and had "blackouts", when she would sink to her knees and remain in a state of coma for two hours. She also became very confused mentally and rambling in her speech.

On examination, on the day following her admission to hospital, the patient was completely unconscious with widely dilated pupils and absence of reflexes. Examination of her ocular fundi revealed advanced papillœdema with hæmorrhages.

Plain skiagrams of her skull, taken for the first time, showed a huge calcified tumour in the right occipital lobe. This was regarded as a calcified papilloma of the choroid plexus of the right lateral ventricle, causing brain stem compression (see Figures I and II).

Immediate operation was performed under local anæsthesia by the raising of a right occipital bone flap. The tumour was encountered inside the posterior portion of the right lateral ventricle, and the calcified portion of the tumour was removed (see Figure III). It was found that some of the tumour, which had not calcified, was extending forwards through the body of the right lateral ventricle, but the patient's condition was not good enough to permit of its complete removal.

After this procedure, the patient had a stormy convalescence, and as the papillœdema subsided, secondary optic atrophy took place, and blindness ensued. Also, her mental condition remained very difficult during the next three weeks, as she was completely disorientated, restless, noisy and confused. A mild infection of the wound occurred in some blood clot, which had collected between the bone flap and the dura, and this delayed the second stage of the operation. During the delay until the infection subsided, a pneumoencephalographic examination was carried out, and this showed that the posterior part of the right lateral ventricle was still blocked, as none of the gas entered it (see Figure IV).

The second stage of the operation was performed on April 23. The bone flap was again raised, and when the dura over the right lateral ventricle was opened, it was found that the soft tissue portion of the tumour had grown considerably, and was now filling up the posterior part and body of the ventricle. The tumour was removed as completely as possible by aspiration and diathermy, until the lining of the ventricle was seen. Bleeding was controlled with "Gelfoam". The dura was closed and the bone flap removed, as it appeared to be the site of a mild chronic infection, and in order to allow a decompression should the tumour recur. Biopsy showed that the tumour was a papillary ependymoma.

Subsequent convalescence was satisfactory, although the cerebro-spinal fluid still contained a very large amount of protein (250 milligrammes *per centum*). Her mental condition improved, but in view of the optic atrophy, no useful vision was regained. She was discharged from hospital on June 26, 1951, but her future must remain in doubt.

The lesson to be learnt from this case is that every patient complaining of severe headaches should have at least a plain skiagram of the skull taken.

Legends to Illustrations.

FIGURE I.—Lateral skiagram of the skull, showing the irregular rounded area of calcified tumour in the posterior part of the cerebral hemisphere just above the tentorium.

FIGURE II.—Showing the solid calcified portion of the tumour removed at the first operation.

FIGURE III.—Lateral pneumoencephalogram, showing lack of filling with oxygen of the posterior half of the right lateral ventricle.

FIGURE IV.—Photomicrograph (high power) showing the cellular structure of the soft infiltrating portion of the ependymoma.

[1] This patient was shown at a clinical meeting of the New South Wales Branch of the British Medical Association, held on May 24, 1951, at the Royal Prince Alfred Hospital.

OCCULT CARCINOMA OF THE BREAST.

By ERIC GOULSTON,
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THE treatment of cancer of the breast is a formidable problem at the present time; how much more so, therefore, is the case in which hard nodules are found in one axilla without any other evidence of disease elsewhere in the body. That these are axillary metastases from the adjoining breast is most likely if a thorough search of every organ in the body by clinical and radiological examination fails to reveal a primary lesion.

Case I.

A single woman, aged thirty-seven years, was examined in July, 1950, complaining of a hard lump in the left axilla which had been present for three months. The left breast felt normal clinically, and a full examination failed to reveal any further abnormality.

An axillary dissection was then performed and the following pathological report was made:

> Sections show that the large tumour and the two smaller ones are lymph nodes which are invaded by a carcinoma. The carcinoma is very anaplastic, the cells growing in masses and cords, without any attempt to imitate adult tissue so that no idea can be formed as to the site of the primary growth from the histological appearance.

This patient refused radical mastectomy and the induction of artificial menopause, and was treated by irradiation of axilla and breast. Up to the present there has been no sign of recurrence, and the patient is living her normal life.

In this case it is assumed that a small hidden primary lesion was present in the breast.

Case II.

A married woman, aged forty-six years, was admitted to hospital in October, 1951, complaining of a lump in the right axilla for nine weeks, which had an inflammatory onset. On examination of the patient there was a hard mass in the right axilla with some enlarged firm glands adjoining and in the supraclavicular region; but the breasts and other regions were clinically normal and all investigations gave negative results. A biopsy of the right supraclavicular region was reported on as follows:

> Large round malignant cells, many of which are in mitosis. They are carcinomatous but too anaplastic to give any indication as to the site of the primary growth.

An intensive course of deep irradiation was given to the neck, axillæ, breast and ovaries. Despite this therapy, further cervical and even submental glandular metastases were found three months later and again treated by irradiation. A biopsy of the submental gland was taken in February, 1952, and the pathologist reported the condition as metastatic, anaplastic carcinoma.

This patient carried on with the aid of androgens until June, 1952, and unfortunately no autopsy was obtained.

In this case well-advanced local metastases were present without any demonstrable primary growth in the breast.

Discussion.

Axillary metastases occasionally occur as the first clinical evidence of malignant disease in a breast. In such cases, when a complete examination excludes the presence of a malignant neoplasm in the neighbouring skin, the bronchial tree, the alimentary tract and the pelvic organs, it is assumed that a small primary growth is present in the breast, and in most reported cases this is found at operation. An excision biopsy of the axillary mass proves the nature of the disease, and the accepted teaching in this country is the performance of a blind radical mastectomy followed by deep X-ray therapy. This operative procedure is anathema to McWhirter, who strongly maintains that simple mastectomy followed by one course of adequate irradiation is the best treatment to adopt in these cases. The successful early results of total adrenalectomy with cortisone maintenance, in the presence of widespread metastatic cancer of the breast, offer some startling food for thought. Another group of surgeons practise as a routine dissections of the medial intercostal nodes in their radical procedure.

The efficacy of inducing an artificial menopause in women with cancer of the breast has not been proved, but it is thought to be desirable and is frequently recommended. However, it may be wiser to withhold this form of therapy at the time of the original treatment and use it at a later date when a recurrence has become manifest.

Summary.

1. Two cases are reported in which the first clinical sign of cancer of the breast was the finding of a hard node in the axilla.

2. Some comments are made on the current treatment of this condition.

Acknowledgements.

Thanks are due to Dr. Colin Graham, pathologist, Royal North Shore Hospital of Sydney, for the histological studies.

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ACUTE NECROSIS OF THE PANCREAS (ACUTE HÆMORRHAGIC PANCREATITIS) CAUSING AND PRESENTING AS AN ACUTE COLONIC OBSTRUCTION.

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IN many cases acute pancreatitis may manifest itself as an acute intestinal obstruction due to paralytic ileus caused by the local effect of the irritant peritoneal exudate. If the exudate is present throughout the abdominal cavity, this paralytic obstruction may affect the whole bowel, both large and small, so that generalized abdominal distension is present. Eight of 69 cases of acute pancreatitis seen at the Royal North Shore Hospital of Sydney (Rose, 1951) and 22 of the 98 cases reported by Siler and Wulson (1950) commenced in this way. On the other hand, if the exudate is less widespread, this paralytic obstruction may affect only an upper jejunal loop. Clinically this may be undetected, or at most there is epigastric distension. However, Grollman *et alii* (1950) pointed out the early diagnostic value of the radiographic appearances of the distended loop in early cases of acute pancreatitis.

Far more rarely encountered is a true mechanical large bowel obstruction by the affected pancreas itself, as in the case described in this report. The swollen pancreas, more particularly the tail, obstructs the colon at the splenic flexure by its enormous increase in size and its peripancreatic adhesions. Furthermore, it does this so thoroughly that the patient presents with an acute large bowel obstruction which masks its own primary cause, the pancreatitis. Miln and Barclay (1952) reported two such cases and found only three others published in the litera-

ture to date. Consequently, these cases are exceedingly rare and no excuse is needed to add another one to the literature.

Clinical Record.

The patient was a married woman, aged sixty-five years. She had been well until five days prior to her admission to the Royal North Shore Hospital on June 5, 1952. Her illness commenced with generalized intermittent colicky abdominal pains. These pains were very mild at first, but later increased in intensity. She did not feel ill when they started. She did not vomit, but she was constipated, though her bowels normally opened freely. On the following day it was noticed that the abdomen was distended, especially on the right side and in the upper part. On that day there was thought to be a faint transient jaundice seen only in the conjunctivæ and present for a few hours only. There was also the suspicion of a mass in the right hypochondrium, which was quickly masked by the distension of the abdomen. Over the next three days the colicky pains constantly recurred and the abdominal distension increased considerably. At no time during this illness did the temperature rise above 99° F., nor did the pulse rate rise above 100 per minute. Daily enemata produced a little flatus in the first two days, but later were without any result at all.

Up till the day of her admission to hospital, the patient resolutely declined to go to hospital. She had been able to take fluids and even a little light food without vomiting. However, on that day she started to vomit, and this made her realize the gravity of her condition, so she consented to come into hospital.

On examination of the patient in hospital, she looked sick. Her tongue was furred, but surprisingly moist. The temperature was 99·6° F., the pulse rate was 80 per minute, and the respirations numbered 20 per minute. The blood pressure was 120 millimetres of mercury, systolic, and 80 millimetres, diastolic. During the examination the patient complained of recurring abdominal cramps. The abdomen was greatly distended, especially on the right side and in the epigastrium. This distension was tympanitic to percussion and on auscultation borborygmi were audible when the pains occurred. There was generalized tenderness, but no rigidity or masses were palpable. Rectal and pelvic examination revealed no abnormalities. All the other systems were normal, and no jaundice was present. Examination of the urine revealed no abnormal constituents.

The diagnosis was made of an incomplete large bowel obstruction which had become complete.

The stomach was emptied by an indwelling Ryle's tube and intravenous fluid therapy was commenced.

Two hours after her admission to hospital the patient's abdomen was explored through a right paramedian paraumbilical incision. The findings were astonishing, to say the least. A complete obstruction to the large bowel was found at the splenic flexure. This was caused by an extrinsic mass, which turned out to be the tail of the pancreas, which was the seat of acute pancreatic necrosis. The large bowel, especially the caecum, was greatly distended down to the splenic flexure, beyond which it was deflated. There was little small bowel distension, as the ileo-caecal valve was functioning still; nor was there much exudate to cause ileus. It was therefore a closed loop obstruction involving the ascending colon and the transverse colon. The pancreas was a swollen, hæmorrhagic and necrotic mass. There was much intraabdominal fat necrosis, but only a comparatively small amount of free hæmorrhagic fluid. There was also acute cholecystitis, the thick-walled gall-bladder being full of dark, turbid bile, in which were many facetted mixed infective calculi. The cystic duct was blocked by a large fixed round cholesterol calculus. The common duct was dilated and full of muddy bile, in which was a large, round, freely movable cholesterol calculus. The lesser sac was obliterated by recent inflammatory adhesions and the swollen pancreas.

The splenic flexure was separated from the pancreas, and almost immediately gas was seen to travel past the obstruction point into the deflated descending colon. The gall-bladder was removed and a choledochotomy performed with removal of the stone. The common duct was sutured and a drainage tube was placed down to the suture line.

The convalescence was at first stormy, a Ryle's tube being required to drain the stomach for four days after operation. During this time fluids were administered parenterally and two mega-units of penicillin were given. The temperature rose to 100° F. each day for the first week after operation and then remained normal. During this time there was slight collapse of the middle lobe of the right lung, which quickly expanded with breathing exercises. The drainage tube drained bile until the fifteenth day, when it was able to be removed.

During convalescence and in the follow-up four months later there was no sign of pancreatic insufficiency as judged by the presense of glycosuria, raised blood sugar level or steatorrhœa. Interestingly enough, on the day after operation the serum bilirubin content was 2·3 milligrammes *per centum*, evidence of subclinical jaundice. However, the serum amylase and urinary diastase figures were not raised, being four and ten units respectively according to the technique of Wholgemuth (Harrison, 1947).

The patient was able to be discharged home on the twenty-third day after operation.

Four months later she was still very well and seemed to have suffered no ill effects from her illness.

Discussion.

The first interesting feature of this case was the way in which the secondary colonic obstruction masked the primary hæmorrhagic pancreatitis, acute cholecystolithiasis and common bile duct calculus. The two last-mentioned conditions should have been suspected if more attention had been paid to her doctor's suspicion of jaundice and the presence of a mass in the right hypochondrium on the second day of her illness. The presence of jaundice was confirmed by the later finding of the raised serum bilirubin values.

The second interesting feature was that actually no symptoms or signs were ever present which could lead one to suspect the presence of such a severe condition as acute hæmorrhagic pancreatitis. The patient never suffered from shock, nor did she have the agonizing pain associated with this condition. The serum amylase and urinary diastase figures on the first day after operation were not raised, so that, as Probstein (1951) points out, it is justifiable to assume that they were not raised before operation, because the raised enzyme figures in acute pancreatitis take some days to return to normal. Consequently these tests would not have helped in the diagnosis. This lack of raised enzyme values was due to the widespread destruction of the pancreatic parenchymal cells. We know that higher figures for these values are obtained in acute œdema of the pancreas (acute interstitial pancreatitis), in which the parenchymal cells are not so much injured, than in acute necrosis of the pancreas, in which there is maximal injury to the parenchymal cells.

Even so, up to four months after operation, no evidence of pancreatic insufficiency has been found. However, Wirts and Snape (1951) point out that the pancreas has a very large functional reserve, and the absence of signs of insufficiency does not mean the pancreas is normal. Also, as I have pointed out previously (Rose, 1951) pancreatitis is a progressive disease, so that signs of insufficiency may occur later. As far as treatment of the intestinal obstruction is concerned, simple mobilization of the colon off the mass was sufficient to reestablish the lumen. In Miln and Barclay's (1952) two cases, the obstructing mass mimicked carcinoma so much that caecostomy was performed prior to further operative investigation.

Summary.

A case of acute mechanical colonic obstruction caused by acute necrosis of the pancreas is presented. The symptoms of the obstruction so masked the pancreatic disease

that this was not recognized until operation was performed for relief of the obstruction.

Acknowledgements.

I wish to thank Dr. Leslie Turner for the information concerning this patient prior to my examining her.

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Reviews.

Prostatectomy: A Method and its Management. By Charles Wells; 1952. Edinburgh and London: E. and S. Livingstone, Limited. 10″ × 7″, pp. 110, with 72 illustrations. Price: 24s.

IN describing his method of prostatectomy, Professor Charles Wells, of Liverpool, has, as he says, "responded to the challenging work of Wilson Hey", and a suprapubic (transvesical) operation with hæmostasis and closure is performed, the optimal time for operation being when the patient is first seen. Preliminary drainage of the bladder is not made, owing to the fear of introducing infection, and operation is carried out at once. The approach is made through a rather long (four to five inches) vertical incision, carried down over the symphysis, but the perivesical fascia is incised above the pubis to leave the latter protected by its surroundings. *Osteitis pubis* has never been experienced. Immediately the bladder has been opened, a number 7 Tiemann catheter is passed to the external meatus and left in position. A diathermy incision is made over the vesical aspect of the prostate around and behind the internal meatus to demarcate the line of enucleation. Bimanual enucleation is then performed, each lateral lobe being separated laterally and at the apex. The rectal finger is removed, the apices are lifted into the bladder and held outwards with forceps, and the floor of the urethra so displayed is cut across with the diathermy needle proximal to the verumontanum. The enucleation is then completed. To counteract future bladder-neck obstruction, two courses are recommended. Either a wedge is cut from the neck at the six o'clock position or, as the author prefers, transverse incisions are made at the three and nine o'clock positions by diathermy, this area being thus relaxed and depressed. With great thoroughness hæmostasis is secured by diathermy, and a 21 Charrière catheter is "railroaded" after the Tiemann to the external meatus, being retained in position by the usual Harris method. The prostate cavity is now packed with two pieces of "Gelfoam" soaked in thrombin solution, to line the floor and part of the lateral walls, and "Oxycel" gauze. Irrigation is not practised, and the catheter is removed on the fifth day as a rule. Ambulation is begun the day after operation, and penicillin and "Sulphatriad" are given as a routine.

Although Professor Wells appears to have achieved very satisfactory results with this method of prostatectomy, it is very doubtful if urologists in this country will be persuaded to operate on their patients as "emergencies" without prior cardio-renal investigations. However, this is an interesting volume, succinctly and clearly written, very well illustrated and excellently produced. It will be read with interest by all urologists.

Malaria: Basic Principles Briefly Stated. By Paul F. Russell, M.D., M.P.H.; 1952. Oxford: Blackwell Scientific Publications. 9″ × 6″, pp. 222, with 64 illustrations. Price: 35s.

IN his book "Malaria: Basic Principles Briefly Stated", Dr. Paul F. Russell, of the Rockefeller Foundation, authoritatively presents, in brief though packed compass, the wide implications of his subject. Successful malarial control, arising out of the intensive wartime research, may now be applied in places where recently, for economic reasons, this was impossible. In the past few years the disease has been ameliorated, and even eradicated, over wide areas. But as the author suggests, there is danger in assuming, as many do, that the problem of malaria has been solved by the effectiveness of DDT and the antimalarial drugs, and that there is no further need for its scientific study. On the contrary, the complexity of the disease calls for constant reference to basic principles. In this small volume the principles are clearly indicated by a distinguished field malariologist. The work is written from a practical viewpoint, and recent developments are usefully incorporated.

The various aspects of malaria are dealt with in five main sections: plasmodia; pathology, clinical course and therapy; anophelines; epidemiology; prevention and control. The sections are well balanced, and though a synoptic style is not adopted, they contain a great amount of information. The antimalarial drugs are comprehensively treated, their use being given in therapy and suppressive treatment, together with notes on parenteral administration and dosage for children. The newer insecticides and their methods of application are usefully described. A brief bibliography of important recent contributions is included.

This is an excellent book. It is well written, nicely produced and usefully illustrated. It is recommended as an introduction to the subject for students, and a valuable companion for all tropical practitioners.

CIBA Foundation Colloquia on Endocrinology: Hormones, Psychology and Behaviour and Steroid Hormone Administration. Edited by G. E. W. Wolstenholme, O.B.E., M.A., B.Ch., assisted by Margaret P. Cameron, M.A., A.B.L.S.; Volume III; 1952. London: J. and A. Churchill, Limited. 8″ × 5½″, pp. 396, with 78 illustrations. Price: 35s.

THE first two volumes of the "CIBA Foundation Colloquia on Endocrinology" have recently been reviewed in these pages. The third volume is entitled "Hormones, Psychology and Behaviour and Steroid Hormone Administration".

Book I is divided into five parts. Part I, on psychological and behavioural reactions connected with the physiological production of steroid hormones, includes nine papers with discussions. Part II, on psychological and behavioural reactions connected with pathological disturbances of steroid hormone production, includes seven papers with discussions. Part III, on psychological and behavioural reactions as side effects of steroid administration, includes two papers and discussion. Part IV, on effects of hormones on the nervous system, consists of one paper. Part V is a debate on methodology.

Part I deals wholly with experiments on animals. Part II covers a wide range of psychological disturbances in man and the possible relations of these to steroid hormones. Part III deals with effects of adrenal cortical hormones and ACTH in relationship to behaviour. Part V is a very detailed and useful debate on clinical methods of observation as distinct from laboratory methods. Most of it is in relation to the psychiatric condition of patients. An illuminating remark by one of the speakers gives a clue to the nature of the discussion: "We used to think that truth was a convergent point which one could attain; now we think it is a black speck in the middle of a cloud, and are not sure that there is a speck there."

The men participating in the colloquia include many of the foremost workers in endocrinology and psychological medicine from different countries; so one must consider that the statements made represent the latest thoughts in the subjects discussed.

Book II consists of twelve papers mainly concerned with methods of administration of steroid hormones, in particular the sex hormones.

The Unipolar Electrocardiogram: A Clinical Interpretation. By Joseph M. Barker, M.D., F.A.C.P., assisted by Joseph J. Wallace, M.D., F.A.C.P., and Wallace M. Yater, M.D., F.A.C.P., with a foreword by Frank N. Wilson, M.D., F.A.C.P.; 1952. New York: Appleton-Century-Crofts, Incorporated. 10″ × 7″, pp. 668, with 458 illustrations.

THE success of J. M. Barker's "The Unipolar Electrocardiogram" is due mainly to the fact that the author is interested in the electrocardiogram, not as an isolated test, but as an essential part of a clinical investigation. The book must have given him the satisfaction of achieving his object, which was to present in simple form a comprehensive text-book of electrocardiography. He has gone to great pains to explain the innumerable prints of electrocardiograms, but in doing so has at times become a little

tangled in a mass of verbiage. It is rather a pity that a book so scientifically sound should be marred by so many misprints.

Barker points out that Wilson raised electrocardiography from the status of empiricism to that of science based on the electric theory, and it is not surprising that his views conform to those of the Wilson school, but for all that he has definite opinions of his own which he ably supports by reasoning. In order to analyse the electrocardiogram he shows that a knowledge of the basic principles is essential. The foundations built on physics and mathematics are clearly explained by numerous diagrams of his own construction. These are a feature of the books; so a close study of this section is heartily recommended to the reader. But the material presented is not merely a collection of facts and theories, nor is it just a summary of the work of the Wilson school, for it includes much that owes its being to the work of the author himself. He has shed light on various problems associated with intraventricular and bundle branch block. He has followed some distance along the ill-defined pathway of right ventricular hypertrophy. He has called attention to that annoyance we all so frequently experience, that is, finding a good left ventricular complex, pointing out that the horizontal line of the septum is the culprit. Thanks to his suggestion of taking electrocardiograms from sites one or two spaces higher than the usual ones for chest leads, many high antero-lateral infarcts have been demonstrated. He devotes considerable attention to the following groups: bundle branch and intraventricular block, myocardial infarction, infarction and intraventricular block, transient myocardial ischæmia and injury and ventricular hypertrophy. He also deals at length with the arrhythmias. His final chapter is concerned with reading, reporting and coding electrocardiograms.

Anyone studying and practising the art of electrocardiography will find this book a sound source of interest and information, as well as a great help in solving awkward problems.

Migraine and Periodic Headache: A New Approach to Successful Treatment. By Nevil Leyton, M.A. (Cantab.), M.R.C.S., L.R.C.P.; 1952. London: William Heinemann (Medical Books), Limited. 7½" × 5", pp. 128. Price: 12s. 6d.

NEVIL LEYTON has published a small pocket volume on "Migraine and Periodic Headache". He is an honorary physician to the Migraine Clinic, Putney Health Centre. He gives a short history of the complaint and discusses the theories of causation. He describes the symptoms and signs and mentions some of the alleged precipitating causes. A short and reasonable differential diagnosis is followed by a chapter on the prognosis of the disorder.

For treatment he favours the use of the anterior-pituitary-like hormone prepared from pregnancy urine (A.P.L.). He starts with 50 units of the hormone injected to detect any ovarian or other sensitivity. Usually, however, up to 1500 units can be given eventually. Two days after the initial dose 100 units are given, and the dose is increased by 100 units twice weekly until 500 units are being given twice a week. Then 500 units are given twice weekly for two weeks, once weekly for four weeks, and after this every two weeks for three months. The author uses "Antuitrin S" (Parke Davis), 500 units per millilitre, or "Pregnyl" (Organon Laboratories), put up as a powder. Apart from the above method of treatment, Leyton uses desensitization therapy. All patients have an intradermal histamine test to determine sensitivity to this compound. He states that nearly all migraine patients give a positive reaction. If they do give any indication of sensitivity to histamine, "Prostigmin" desensitization is commenced. For this 15 milligrammes of "Prostigmin Bromide" (Roche) are dissolved in one ounce of water. A few drops of *Aqua Chloroformi* are added as a preservative. The patient takes one drop of this solution in water thrice daily, and increases the dose by one drop thrice daily, until 50 drops are taken thrice daily. This dose continues for two weeks and is then reduced to once daily in the morning for two months. Various unpleasant reactions may occur—giddiness, increased headache, faintness, dry mouth or nausea. Histamine desensitization is also described. Carbachol 0·002 milligramme thrice daily, and vitamin B_2 compound injections are also recommended for what Leyton calls the neuritic type of pain, though he admits the difficulty of explaining the reasons for benefit. There is very little accepted evidence that neuritic pain is relieved by vitamins, unless in cases of beriberi. Leyton derides other forms of treatment, though without doubt many migraine patients have been relieved of their symptoms by much simpler methods in much less than three to six months. Leyton is an enthusiast. He describes excellent results from pituitary injections, and also from "Prostigmin Bromide" therapy by mouth. Nevertheless, he mentions several other methods of treatment, which he praises, without explaining the rationale.

The Story of the Adaptation Syndrome: Told in the Form of Informal, Illustrated Lectures. By Hans Selye, M.D., Ph.D. (Prague), D.Sc. (McGill), F.R.S. (Canada); 1952. Montreal: Acta, Incorporated. 9" × 6", pp. 226, with about 70 illustrations.

IN "The Story of the Adaptation Syndrome" Hans Selye not only sets out his present views on this controversial subject, but also tells the history of their gradual development. The material in the book is presented in the form of seven lectures. As these have been compiled from wire recordings of the lectures much of the informality of the spoken word is retained. The author has used the experimental work carried out by himself and his co-workers through the years, full references being given to the original publications. The excellent photographs which clarify the text are also drawn mainly from these papers. Liberal use is made of simple and effective diagrams.

It is clear that while the underlying concept of the general adaptation syndrome has remained largely unchanged for many years, there has been constant development in detail, occasioned mainly by the increasing range and purity of natural and synthetic endocrine preparations available. An enormous amount of experimental work has been done in endocrinology. The results of each set of experiments have been absorbed into the concept of the general adaptation syndrome. Critics of Selye do not question the experimental data, but rather the extent of the application of these studies in animal endocrinology to a general hypothesis covering human disease. In the last two lectures these criticisms are discussed, first objectively as a balance sheet of the principal facts, set against the doubts and uncertainties raised by the concept of stress as a cause of disease. Selye concludes by giving a subjective and personal assessment of the significance of his work.

The book is entertaining and readable. It represents a useful survey of the views of a man who has had the originality to formulate a hypothesis and the courage to defend it, while working prodigiously to extend the factual basis on which it is founded.

The Foot. By Norman C. Lake, M.D., M.S., D.Sc. (London), F.R.C.S. (England); Fourth Edition; 1952. London: Baillière, Tindall and Cox. 8½" × 6", pp. 472, with 166 illustrations. Price: 25s.

IT is always interesting to read a new book on such a controversial subject as the foot. In the new edition of "The Foot" Norman C. Lake has enlarged the text and added to the illustrations, producing a book that should have a wide interest. It covers in detail the very numerous foot disorders and only omits the major orthopædic surgical procedures. There is quite a large section on the evolution of the foot, and this forms the basis for Lake's theory that many foot disorders are due to the fact that the human foot has not yet evolved the stability necessary for the strains that it must withstand. Most of the ideas on ætiology and treatment in this book are standard teachings; but many of them are not wholly satisfactory. Considering the frequency and importance of foot troubles, our knowledge of their causes, prevention and treatment leaves much to be desired. Recent articles and correspondence on *hallux valgus* and *metatarsus primus varus* have shown how much work remains to be done on this condition alone. There is much to be learned from this book, and it should be a great help to doctors, physiotherapists, chiropodists and makers of footwear.

A Clinical Atlas of Blood Diseases. By A. Piney, M.D., M.R.C.P.; Seventh Edition; 1952. London: J. and A. Churchill, Limited. 8½" × 5½", pp. 144, with 48 illustrations, 45 in colour. Price: 21s.

A. PINEY, the author of "A Clinical Atlas of Blood Diseases", now appearing in its seventh edition, has been a pioneer in the field of hæmatology. This small compact inexpensive volume is well known and has been much used since its appearance in 1930. In his preface to the seventh edition, Dr. Piney records with deep regret the death of his co-author, Dr. Stanley Wyard. He also expresses the modest hope that "the condensed information, clinical, hæmatological and pathological, will continue to meet the needs of senior students and practitioners, by adding a little to their know-

ledge, by recalling facts which have slipped their memory, or by stimulating them to seek further information in the literature".

The present edition includes 45 plates in colour, four of which are new. Most of these are very good indeed; but some are so diagrammatic as to distort the picture they present. In plate 25, illustrating the blood in aleuchæmic myeloid leuchæmia, the red cells are disproportionately small compared to the leucocytes; plate 11 bears no title, and plate 40, illustrating glandular fever, is very poor. As well as its colour plates, the atlas contains brief notes on the principal diseases of the blood, a small section on hæmatological technique and a combined glossary and index. There are no references to the literature anywhere in the book.

The Science and Art of Joint Manipulation. By James Mennell, M.A., M.D., B.C. (Cantab.); 1952. Volume II: The Spinal Column. London: J. and A. Churchill, Limited. 10" × 7½", pp. 272, with 148 illustrations, some in colour. Price: 42s.

VOLUME II of "The Science and Art of Joint Manipulation", by James Mennell, deals with the spinal column. It embraces a former monograph on backache and in addition consists of reflections on "the restoration of joint mobility". It follows naturally on Volume I, which dealt with the extremities. Mennell has been the pioneer of physical medicine in Britain and has tried hard to place the science and art of joint manipulation on a reasonably satisfactory basis. This book is in no sense a treatise on backache. The author's concept of a "joint lesion" as a cause of pain in or referred from the back follows, to some extent, the chiropractors' creed and is unproven. The chapters on the general review of the movement of the spinal joints and the anatomy of the articular facets are good. The laws and technique for curing any "binding" or "lack of joint mobility" have not changed materially over the last twenty years and are set out in great detail. Mennell stresses the importance of "taking up the slack" of ligaments to the full extent before exerting a sudden thrust as a mobilizing force.

This type of book is, as usual, difficult to read. Descriptions of manœuvres to aid in the diagnosis and treatment of the "seized joint" are, however, clarified by excellent graphic line diagrams. The X-ray pictures are not convincing. Orthopædic surgeons, specialists in physical medicine and general practitioners will find the subject matter controversial, but they will benefit from a study of the passive movements which may be used to aid in the diagnosis of a patient with backache.

Stereoencephalotomy: Thalamotomy and Related Procedures: Part I—Methods and Stereotaxic Atlas of the Human Brain. Edited by E. A. Spiegel, M.D., and H. T. Wycis, M.D., F.A.C.S.; Volume I; 1952. New York: Grune and Stratton. 11" × 8½", pp. 184, with 79 illustrations. Price: $8.00.

THE first volume of Spiegel and Wycis's book on stereoencephalotomy is very beautifully produced and illustrated and provides some first-class practical information for those who are concerned in exploring the possibilities of the new branch of cerebral surgery which is included in the subject of stereoencephalotomy. Apparatus of the type described has been for many years familiar in surgical experimental laboratories; one has for years been in use in the laboratory of the Royal College of Surgeons at Lincoln's Inn Fields, London, for use with animals. The extension of this procedure to experimental and therapeutic methods on the human patient is a recent advance, but one fraught with great difficulty because of the tremendous variation in the cranial measurements in different human beings; these variations exceed in many ways those met with by experimental workers in the laboratory using one type of animal. However, should stereoencephalotomy become a reliable practical procedure, it will enable surgery to be directed to small localized areas deep within the brain without any of the surgical trauma involved in effecting an open approach to the structure aimed at. The procedures which will be most appropriately dealt with in this way, it would appear, are those associated with the expected advances in psychosurgery; and should stereoencephalotomy prove all that is hoped of it, one will be able to substitute for the grosser procedures, such as prefrontal leucotomy, the more scientifically evolved and more precisely controlled focal destructions of isolated nerve bundles and nuclei in the thalamic neighbourhood. Work of this type is in progress at the University of Sydney, where the focal destruction of thalamic nuclei is being investigated experimentally in animals.

The apparatus illustrated in this book is very interesting and provides us with useful ideas for the application of such methods. The illustrations are so good that it would be easy to construct apparatus similar to this from the pictures. The atlas with its system of coordinates is also excellent, and it provides a very practical and useful handbook for anyone doing this work. The anatomical detail is, however, capable of further refinement and precision, and one hopes that when Part II of this book appears it will include such further refinement.

This book will prove to be a necessity for the library of those who are interested in stereoencephalotomy, as well as those interested in the making of electrical records from deep structures in the brain and in applying stimuli to deep structures in the brain for experimental purposes, as this type of procedure is what they also will employ. The second volume of this interesting and well-produced work will be awaited with great interest.

Essentials of General Anæsthesia. By R. R. Macintosh, M.A., M.D., F.R.C.S., D.A., and Freda B. Bannister, M.A., M.D., D.A.; Fifth Edition; 1952. Oxford: Blackwell Scientific Publications. 9" × 6", pp. 390, with 247 illustrations. Price: 40s.

THE publication of the fifth edition of "Essentials of General Anæsthesia" by Mackintosh and Bannister is an event of great importance to anæsthetists and medical students. The book is well produced, easy to read and profusely illustrated. Although of less than 400 pages, it is most comprehensive and expounds clearly the scientific facts on which the practical art of anæsthesia is so firmly founded. This is characteristic of any publication from the department of anæsthesia presided over by Professor Mackintosh, whose dexterity and skill were the basis of his very successful career as a consultant anæsthetist.

The chapters on cyanosis and nitrous oxide are particularly good, particularly the use of the latter in dental surgery, a technique which, though relatively neglected in Australia, is widely used in Great Britain. The spectre of *status lymphaticus* is discussed and dismissed, but the authors stress the undue sensitivity to anæsthetic agents displayed by certain children who are described as being unusually docile. The new chapter on relaxants describes in some detail the action of curare and similar substances at the myoneural junction, but the difference in action between these and the depolarizing agents is not as clear as it might be; nor is any reference made to the possible hazards of combining drugs of the different types. No mention is made of the use of minimal doses of relaxants as adjuvants to thiopentone in cases in which quiescence is desired as opposed to muscular relaxation. Succinyl choline chloride or "Scoline", the newest and most evanescent of the depolarizing relaxants, gets no mention. The chapters on respiratory obstruction and emergencies are immensely practical and helpful, but it seems odd that no differentiation is made between ventricular asystole and fibrillation, and their treatment by immediate thoracotomy. The final chapter on the legal aspects of anæsthesia is a timely reminder of the increasing risks of litigation and should be heeded by all anæsthetists.

Progress in Ophthalmology and Otolaryngology: A Quadrennial Review. Part I—Ophthalmology, edited by Meyer Wiener, M.D., and A. Edward Maumenee, M.D.; Part II—Otolaryngology, edited by Percy E. Ireland, M.D., and Joseph A. Sullivan, M.B.; Volume I; 1952. New York: Grune and Stratton. 9" × 6½", pp. 680, with 19 illustrations. Price: $15.00.

OVER seventy contributors have been selected by the editors of "Progress in Ophthalmology and Otolaryngology" to review current advances in their respective fields. The book is described as a quadrennial review, and the relatively long time period allows a broader view to be taken than is possible in volumes or articles that appear annually or more frequently. Part I, "Progress in Ophthalmology", is divided into four sections, which deal respectively with basic science in ophthalmology, the diagnosis and treatment of diseases of the eye, surgery of the eye, and related subjects in ophthalmology. Apart from the articles with conventional titles, particular subjects dealt with include the electrophysiology of vision, retrolental fibroplasia, the treatment of glaucoma with autonomic drugs, ACTH and cortisone therapy, antibiotics, the use of fibrin coagulum in ocular surgery, enucleation and the newer implants, industrial ophthalmology, hygiene, sociology, education and history, the education and rehabilitation of the blind, and the relationship of the eye to the ear, nose and throat. In Part II, "Progress in Otolaryngology", the articles are

grouped under four subject headings: the ear; the nose, sinuses and naso-pharynx; the larynx, tracheo-bronchial tree and œsophagus; allergy. Some of the special subjects covered include the diagnosis and surgical treatment of otosclerosis, the surgery of Ménière's disease, the problem of noise in industry, hearing aids, the modern conception of headache, tracheotomy in acute tracheobronchitis and poliomyelitis, and the use of cortisone and ACTH. No attempt is made to include every article written on a particular subject, the various authors selecting those which, in their judgement, offer something new or present the subject in a new light. The book is intended for beginners in the specialties of ophthalmology and otolaryngology, as well as for those busy practitioners who find it difficult to find time to read all the articles published in the various journals, but still do not wish to fall behind. This description surely includes practically everyone concerned with these specialties; so this attractively produced and carefully compiled volume should be generally welcome.

Survey of Compounds Which Have Been Tested for Carcinogenic Activity. By Jonathan L. Hartwell; Second Edition; 1951. Public Health Service Publication No. 149. United States Government Printing Office, Washington. 9½" × 11", pp. 586. Price: $4.25.

THE second edition of the "Survey of Compounds Which Have Been Tested for Carcinogenic Activity" covers the literature on experimental carcinogenesis to the end of 1947. It lists 1329 compounds, of which 322 were reported as causing malignant tumours in animals, and 35 others as inducing only benign tumours. The proportion of carcinogenic compounds to those tested is the same as that in the first edition. Only single compounds are listed; such complex mixtures as tars, irradiated sterols and articles of diet are not included. The guiding principle is stated to have been to omit such mixtures as render it difficult to determine to which constituent the given effects are due. The volume contains a tabular review, a bibliography and a series of indexes, which enable material to be found from a number of different starting points. The survey should save much tedious work for those engaged in this field of investigation, though they are strongly urged by the compilers to consult the original references before coming to conclusions based on data cited in the volume.

Bibliography of the Published Writings of Sir Almroth E. Wright, M.D., F.R.S. Compiled by Leonard Colebrook, F.R.S.; 1952. London: William Heinemann (Medical Books), Limited. 10" × 6½", pp. 32, with one illustration. Price: 6s.

SIR ALMROTH WRIGHT wrote freely on a number of subjects, but particularly on his researches and experience on medical subjects. In a bibliography of his published writings, Leonard Colebrook has included twelve books and a great number of papers and published letters. In each case he has added a note in which he has aimed to state briefly what one may expect to find in the book or paper, and in some instances to explain the circumstances in which it came to be written. He points out in his preface that he has occasionally offered comment where it seemed worth while, but not criticism. The attractively produced little volume provides a permanent record of some aspects of the thought of a distinguished medical man.

Notes on Books, Current Journals and New Appliances.

Family Doctor. Published monthly by the proprietors, the British Medical Association, Tavistock Square, London, E.C.1. Sole agents for Australia and New Zealand, Gordon and Gotch (Australia), Limited. Subscription for twelve months, 20s. (sterling), including postage.

THE January issue of this popular magazine offers a good selection of readable and informative material. Articles deal with the activities of an ambulance service, bores (human), the patient's problem of when and when not to go to the doctor, memory training, childbirth, children's posture, problems of the child from seven to eleven years, sleep and small children, the right use of toys, mixed feeding, breast feeding, old age, the use of colour in ward and house decoration, blue babies, sciatica, eating habits, care of finger nails, feeding the expectant mother, lighting in the home and the man's responsibility in marriage. It is carefully pointed out that "Everything you read in *Family Doctor* is written by people who really know". It seems reasonable to comment that, in addition, everything is presented to the reader by people who know how to present it. This magazine is worth fostering, and, as we have remarked before, it could be a great help to the busy practitioner in telling his patients the things that he has the inclination but not the time to tell them.

Books Received.

[*The mention of a book in this column does not imply that no review will appear in a subsequent issue.*]

"Human Milk: Yield, Proximate Principles and Inorganic Constituents", by S. D. Morrison, B.Sc.; 1952. Technical Communication No. 18 of the Commonwealth Bureau of Animal Nutrition, Rowett Research Institute, Bucksburn, Aberdeenshire, Scotland. Slough, Bucks.: Commonwealth Agricultural Bureaux. 8½" × 5½", pp. 100, with 12 text figures. Price: 10s. 6d.

A review of the subject with "an attempt to assess the significance of the work already done".

"L'hérédité humaine", by Jean Rostand; 1952. Paris: Presses Universitaires de France. 7" × 5", pp. 126, with 12 text figures.

A small book on heredity for the non-medical reader.

"Aids to Theatre Technique", by Marjorie Houghton, M.B.E., S.R.N., S.C.M., D.N. (London), with a foreword by D. R. Davies, F.R.C.S.; Second Edition; 1952. London: Baillière, Tindall and Cox. 6½" × 4½", pp. 276, with 76 illustrations and 49 text figures. Price: 6s.

Comprises twenty chapters dealing with every aspect of work in the operating theatre from the nurse's point of view.

"Diseases of the Heart and Arteries: Anatomical and Functional Disturbances of the Circulation: Treatment", by George R. Herrmann, M.S., M.D., Ph.D., F.A.C.P.; Fourth Edition; 1952. St. Louis: The C. V. Mosby Company. Melbourne: W. Ramsay (Surgical) Proprietary, Limited 10" × 7", pp. 652, with 215 text illustrations and four plates in colour. Price: £6 11s. 3d.

The author is professor of medicine in the University of Texas.

"Muscle Relaxation as an Aid to Psychotherapy", by Gerald Garmany, B.Sc., M.B., Ch.B., M.R.C.P., D.P.M.; 1952. London: The Actinic Press. 9" × 6", pp. 66. Price: 5s. 6d. (cloth edition), 3s. 6d. (paper edition).

The first volume of a "Physical Medicine Series".

"Rose and Carless' Manual of Surgery: For Students and Practitioners", by Cecil Wakeley, B.T., K.B.E., C.B., LL.D., M.Ch., D.Sc., F.R.C.S., F.R.S.E., F.R.S.A., F.A.C.S., F.R.A.C.S., assisted by 18 contributors; Eighteenth Edition; 1952. In two volumes. London: Baillière, Tindall and Cox. 10" × 6½", pp. 1480, with 1011 illustrations, 18 in colour. Price: 63s. the set.

Completely rewritten since publication of the previous edition in 1943.

"The Medical Clinics of North America"; 1952. Philadelphia and London: W. B. Saunders Company. Melbourne: W. Ramsay (Surgical) Proprietary, Limited. Boston Number. 9" × 6", pp. 320, with 30 illustrations. Price: £6 per annum with paper binding and £7 5s. per annum with cloth binding.

A symposium of 22 articles from Boston on specific methods of treatment.

"Allergy and Seborrhœa: Comparative Study of the Seborrhœic and Allergic States", by J. Avit Scott, M.D.; 1952. London: H. K. Lewis and Company, Limited. 7½" × 5½", pp. 100. Price: 12s. 6d.

Based on personal clinical experience and extensive reading.

"Infant Feeding", by Vernon L. Collins, M.D. (Melbourne), M.R.C.P. (London), D.C.H. (London); 1953. Melbourne: W. Ramsay (Surgical) Proprietary, Limited. 7" × 4½", pp. 92. Price: 6s.

The author is Medical Director of the Children's Hospital, Melbourne.

The Medical Journal of Australia

SATURDAY, JANUARY 31, 1953.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: surname of author, initials of author, year, full title of article, name of journal without abbreviation, volume, number of first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

COLLEGE OF GENERAL PRACTITIONERS.

IN Great Britain a College of General Practitioners has been established. In the *British Medical Journal* of December 20, 1952, will be found the full text of the report of what was termed a "Steering Committee", and at the end of this report we read that the Steering Committee has handed over to a "Foundation Council" of general practitioners. Every member of the British Medical Association in Australia receives the *British Medical Journal*, and every member is therefore urged to study the report and to read the leading article published in the same issue. We note that in 1845 general practitioners had a good chance of founding a college of their own and that the proposal had reached the stage of a draft Bill prepared by the Secretary of State, when "they carelessly allowed the opportunity to slip from their grasps". References are given to statements during the last few years which have awakened the project. On looking up some of these we find a variety of reasons are given. In "Modern Trends in Public Health", published in 1949, W. Edwards, writing of preventive medicine and the general practitioner, envisaged a Royal College of General Practitioners with the motto: "If preventable, why not prevented?" In July, 1951, George MacFeat, writing in the *British Medical Journal* (supplement) on the family doctor, discussed the credit and status of the general practitioner. He stated that he would create a Royal College of General Practitioners, with its own higher qualification. In March, 1949, T. B. Layton wrote in *The Lancet* advocating the formation of a Royal college of family doctors which would be able to deal with medico-political problems and injustices. R. J. F. H. Pinsent wrote to *The Lancet* in August, 1951, suggesting the establishment of a College of General Practice, which would give increased earning powers to its members in general practice under the National Health Service. These, of course, may be isolated opinions, but nevertheless they have found their way into reputable medical literature. During recent years opinions have been freely expressed in the Old Country that general practice is not what it used to be, that the status of general practitioners has been lowered and that the function of the general practitioner, apart from the treatment of minor ailments, is likely to degenerate into that of an out-patient officer who sends patients to suitable specialists. It appears that we must accept this British estimate of British conditions, though there must certainly be many exceptions to the reported state of affairs. Naturally we wonder in this part of the world how much of the alleged deterioration in the Old Country is due to the increasing complexity of medical science and how much is due to the fact that the profession in Britain is working as a nationalized unit in a national health service. Anyhow, there is a determination to make an attempt "to improve the efficiency and good name of general practice, to raise its standard and its standing in the eyes of the medical profession, of students, and of the public".

The Steering Committee (whose ten general practitioner members become the Foundation Council of the College) sets up as the ultimate goal in Britain a British Academy of Medicine—a central headquarters in which can be represented all branches of the medical profession in the United Kingdom. The function of the College is stated to be academic and educational—and not political. Its aim "must be" to supplement the work of the universities, the Royal Colleges, the Society of Apothecaries, the British Postgraduate Medical Federation, and other educational institutions, and not to compete with them or encroach on their functions. It will not seek to institute a qualifying examination. Lastly, as an organization the College will regard its work as complementary to the scientific and educational functions of the British Medical Association. The statement that the function of the College will not be political should be read in conjunction with the following statement under the heading of "Policy":

> The college will plan and follow an agreed policy about many matters concerning general practice. Working not as a rival to other institutions, nor duplicating work that is already being done satisfactorily, but in its own field and in its own right it will correlate and implement the decisions and policies planned by those committees and other bodies which have concerned themselves with general practitioners. We think that a college will in this way give strength and support to general practice, and ensure that its future development in Great Britain will take place along lines carefully considered by men and women with the right kind of experience.

The two statements seem from the Australian point of view to be incompatible. Much depends on what the Steering Committee regards as "political". In Australia we divide the activities of the organized medical profession into two groups—scientific and medico-political. The latter term embraces everything concerned with the conduct of medical practice. Perhaps the Steering Committee gives the word a more restricted significance. If it does not do this, we cannot, and surely no one else can, imagine that a College of General Practitioners will implement without alteration "decisions and policies planned by those committees and other bodies which have concerned themselves with general practitioners". How-

ever, the College has been formed and the proof of the pudding will be in the eating.

It is not necessary in this place to describe the criteria for admission to the new College—they are set out in the report. Clearly, if a college is to be inaugurated, some method of selection of members has to be devised, and those suggested do not appear to be unreasonable. Correspondents to the *British Medical Journal* have suggested that once a practitioner has been admitted to the College he may abandon study, deteriorate and stagnate. This is, of course, true, but it is true of any medical practitioner—even Fellows of the august Royal Colleges have to keep themselves up to the mark if they do not wish to stagnate. Even compulsory attendance at post-graduate refresher courses would not provide the answer, for post-graduate lectures can go in one ear and out of the other, and post-graduate demonstrations call for close attention and the display of a critical faculty to yield good results. The new College will have to stand or fall according to the intrinsic worth of those who comprise it, just as any other college or similar body has to do.

It is probably correct to say that the College of General Practitioners would not have come into being so suddenly (its birth has been precipitate) had not the medical profession in the United Kingdom been labouring under a national health service. We can understand, and sympathize with, the feelings of general practitioners in Great Britain. We hope they have acted wisely. Much argument could be raised for and against what has been done, but it would be foolish and futile to attempt anything of the kind at the moment. As all practitioners know, one of the chief problems in medical education is to give the undergraduate student some training in general practice from the practical standpoint, and discussions on that aspect have taken place on several occasions in these columns. Anything that is done in this direction will make it easier for young graduates to take up general practice. The gloomy view that is taken in England about the status and scope of general practice does not apply to Australia. Australian geography and Australian individualism have helped to keep general practice in this country on a high level of efficiency. We recall what Professor D. M. Dunlop wrote recently in his report on his Sims Travelling Professorship:

> The most striking characteristic of Australian medicine is the excellence of the general practitioner—probably the best men of their kind in the world. I visited many country centres where practitioners came to my clinics and lectures from scores of miles around. I was immensely impressed by the type of men I met—by their self-reliance, wide reading, skill and enthusiasm. In remote districts they were indeed doing men's jobs, and made me feel very humble. Although it was necessary to be practical in one's lectures to them, it would have been disastrous to talk down to them, and their questions were shrewd and searching.

This should not fill us with pride or make us yield to complacency; rather should it make us alert to maintain a high standard and to keep before us the ideal of the family doctor. Our conditions of freedom should make this possible. This means that Australian general practitioners have no reason to contemplate the formation of any college or similar body. Almost every general practitioner in Australia is a member of the British Medical Association, which safeguards his interests and provides him with all the opportunities which he needs to keep himself informed of the advances in medical science.

Current Comment.

HISTOPLASMOSIS IN AUSTRALIA.

AN interesting feature of a "Manual of Clinical Mycology",[1] compiled by Conant and others in 1944, is a series of outline maps of the world showing the geographical distribution of diseases caused by fungi. In maps illustrating the incidence of histoplasmosis, coccidioidomycosis, chromoblastomycosis, sporotrichosis, North and South American blastomycosis and piedra, Australia appears as a blank space, entirely free from any of these diseases. American authorities on this subject have expressed the opinion that sooner or later some, if not all of them, would be found in Australia. Coccidioidomycosis is extremely prevalent in California, and infection may be acquired by handling goods contaminated with dust containing *Coccidioides immitis*, as was shown by the occurrence of a case in a wool sorter working in Massachusetts,[2] where the disease had not previously appeared. The patient had handled wool from California and from many other parts of the world. It appears, therefore, that we should be on the lookout for coccidioidomycosis. Chromoblastomycosis has appeared in Queensland; two cases were reported from that State by Saxton, Hatcher and Derrick[3] in 1946, J. D. Hicks[4] described a third case later in the same year, and an article by R. Powell,[5] of the Queensland Institute of Medical Research, dealing with a series of 31 patients with the disease, is in course of publication. Two cases of sporotrichosis,[6,7] described recently, are the first to be reported from Australia, though others may have been diagnosed. Histoplasmosis occurring in a farmer in New South Wales was recorded by Johnston and Derrick (1948);[8] cultures were not made. Histories of two men with histoplasmosis appear in this issue of the journal. One patient had never been outside Australia, the other had served in the army for varying periods in Dutch New Guinea, in the Schouten islands and in Borneo. In each case the diagnosis was established by culture as well as by biopsy.

The history of histoplasmosis began in 1906, when Darling, working in Panama, described three cases and the causative organism which he thought to be a protozoon and named *Histoplasma capsulatum*. The infectious agent was shown to be a "biphasic" fungus in 1934, when de Monbreun succeeded in growing it from the blood-stream and spleen of a five-months old infant. In these early cases the diagnosis was made only at autopsy and the disease was regarded as extremely rare and invariably fatal. In 1941 a specific cutaneous test was devised. Surveys made by the help of this test threw new light on the incidence of histoplasmosis and showed that it occurred in mild and latent forms. It was shown that many persons with non-tuberculous calcification of the lungs reacted to the histoplasmin test. The test has provided the means for a thorough study of the geographical distribution of histoplasma infection, and this has been carried out mainly under the auspices of the Tuberculosis Division of the United States Public Health Service and the World Health Organization. The results are summarized and discussed in a paper by Mochi and Edwards (1952).[9] These authors have reviewed the verified cases of histoplasmosis, the studies of histoplasmin sensitivity to be found in the literature before January, 1951, and also a number of hitherto unpublished investigations of histoplasmin sensitivity. They state that:

[1] "Manual of Clinical Mycology", 1944; reprinted 1947.
[2] *New England J. Med.*, Volume CCXLIII, 1950, page 482.
[3] *M. J. Australia*, 1946, Volume I, page 695.
[4] *M. J. Australia*, 1946, Volume II, page 705.
[5] Powell, R., personal communication.
[6] *Australian J. Dermat.*, Volume I, 1951, page 142.
[7] *M. J. Australia*, 1952, Volume II, page 624.
[8] *M. J. Australia*, 1948, Volume II, page 518.
[9] *Bulletin of the World Health Organization*, Volume V, 1952, page 259.

The highest levels of histoplasmin sensitivity in any region in the world occur in the east-central part of the U.S.A. near the junctions of the Missouri, Mississippi, and Ohio rivers, an area in which clinical cases of histoplasmosis have been repeatedly observed. In Canada, histoplasmin sensitivity has been found only in the south-eastern provinces. A somewhat lower prevalence of histoplasmin reactors than in the USA has been reported from certain localities in Mexico, Central America, and South America; the relatively small number of histoplasmosis cases diagnosed in these areas is suggestive but inconclusive evidence of the existence of endemic centres of histoplasmosis.

There appears to be very little histoplasmin sensitivity where studies have been conducted outside the Americas. Practically nothing is known concerning sensitivity in Asia, except for two investigations in India which revealed a negligible number of reactors to histoplasmin. A great many reports covering most of the European countries have failed to demonstrate any sensitivity areas, although single, isolated cases of histoplasmosis have been diagnosed in Austria, Bulgaria, England, the Netherlands, Portugal, Spain and Turkey. Several cases have occurred in the Union of South Africa, which appears to be an area of low prevalence of histoplasmin sensitivity, but little is known of the rest of the African continent. Three cases have been observed in Java, but no studies of histoplasmin sensitivity have yet been reported.

Mochi and Edwards, both of whom are medical officers of the Tuberculosis Research Office, World Health Organization, Copenhagen, urge that large-scale studies of histoplasmin sensitivity should be conducted wherever possible, to complete our knowledge of this disease. Histoplasmosis is an intensely endemic disease, more closely related to place of residence than to any other factor known today. It is most important, therefore, when surveys are conducted to obtain an accurate record of where each person has lived from birth to the time of examination.

GIANT-CELL AND OTHER BONE TUMOURS.

LITTLE agreement exists on the relationship to one another of solitary bone cysts, the localized form of *osteitis fibrosa* and giant-cell tumour of bone, or osteoclastoma, as R. A. Willis, following Matthew Stewart, prefers to call it. Willis states in his book "Pathology of Tumours" that the masses of tissue with a structure closely resembling that of osteoclastoma found in the bones with generalized and localized *osteitis fibrosa* are not true tumours and should not be called such; they have, he points out, no powers of independent growth, but retrogress when the bone re-forms. He emphasizes the fallacy of assuming identity of pathological conditions on the basis of structural resemblance. Boyd, in his well-known book on surgical pathology, refers without comment to the development of small giant-cell tumours in the wall of the cysts commonly formed in association with the localized form of *osteitis fibrosa*, and in a discussion on bone cysts lists giant-cell tumour as one of the diseases complicated by cyst formation. Yet another view is held by R. McWhirter,[1] who considers that giant-cell tumours, localized *osteitis fibrosa* and bone cysts are all variants of the one process, for which "dysfibroplasia" would appear to be the most appropriate term. He states that the vascularity of the lesion is the essential factor which determines the histological findings. The vascularity in turn is dependent on the stage at which the error in development at the epiphyseal plate took place. The growth of bone from the cartilaginous epiphyseal plate is a complex process and errors are, therefore, liable to occur. Almost the whole length of the humeral shaft is formed from the upper epiphyseal plate. Cysts involving the shaft of the humerus can have their origin from the metaphyseal region at the upper end of the bone. The precise position they come to occupy in the shaft is determined by the age at which the developmental error took place. Further evidence in support of this statement is to be found in those cases in which the error in development persisted for a long period of time. The defect is then found to involve a considerable portion of the shaft and, if no recovery takes place, the lesion will extend to the epiphyseal plate. In the more common type of lesion the error in bone formation is of limited duration and is followed by the laying down once again of normal bone which thus comes to separate the lesion from the epiphyseal plate. Again, exactly the same findings may occur in dyschondroplasia, and the chondromatous lesions may be separated from or be in continuity with the epiphyseal plate. What we call bone could equally well be termed "specialized fibrous tissue"—fibrous tissue which has the special property of being able to lay down, in its interstices, calcium so as to form a rigid supporting framework for the body. If now the error made in the metaphyseal region results in the laying down of ordinary fibrous tissue instead of this specialized fibrous tissue called "bone", we have the condition known as "localized *osteitis fibrosa*". This ordinary fibrous tissue contains no calcium and, accordingly, shows as a defect in the shaft on radiographic examination. The epiphyseal region is the most vascular region of a bone, and the vascularity is particularly high at the growing end. In the humerus, therefore, as the area of fibrous tissue extends further and further from the upper epiphyseal plate, the blood supply to the fibrous tissue becomes progressively poorer. The fibrous tissue is liable to degenerate, and when this takes place, a cyst is formed. If, on the other hand, the same developmental error occurs at a much later date, and just before the closure of the epiphysis, the fibrous tissue remains in an area with a rich blood supply and does not undergo degeneration. The blood vessels within the fibrous tissue lack the support normally occurring in bone, and in the course of time the vessels may become dilated, thus further increasing the blood flow through the lesion. When the vascularity becomes sufficiently high the lesion will pulsate. The continued pulsation will lead to bone erosion, just as occurs when an aneurysm of the aortic arch erodes the spine. Extension will naturally take place in the direction of least resistance, which is into the fine cancellous bone of the epiphysis, and these lesions can easily extend in this direction, for the epiphyseal plate is no longer present to act as a barrier. As the lesion increases in size the bone debris formed stimulates the formation of foreign body giant cells. Localized *osteitis fibrosa* occupies a position intermediate between cysts and giant-cell tumours. Characteristically, the lesion is found in the shaft only a short distance away from the epiphyseal plate and in sites where the vascularity is sufficiently good to prevent cystic degeneration from taking place, but insufficiently great to lead to the development of a giant-cell tumour. If the suggestions made are accepted, McWhirter continues, it will be clear that giant-cell tumours, *osteitis fibrosa* and bone cysts are all fundamentally manifestations of the same process and differ only in their degree of vascularity, a feature which is largely determined by the age at which the developmental error occurs. Giant-cell tumours, therefore, on this hypothesis, are not really tumours at all in the strict sense of the word. Many papers have been written over many years concerning the question of whether or not giant-cell tumours may become malignant. No tissue is immune to malignant change, but it must be a rare event for a typical giant-cell tumour ever to become malignant. When giant-cell tumours appear to have become malignant, and especially when this change has been reported as occurring within a comparatively short time, McWhirter considers it far more probable that the tumour was in fact malignant from the beginning; that is to say, it was an osteogenic sarcoma with a high giant-cell content. He suggests that the fact that it was not recognized as an osteogenic sarcoma in the initial examination of a section merely serves to show the limitations of histological examination and stresses again the importance of a diagnosis and of a classification being built on all the available evidence—clinical and radiographic as well as histological.

[1] *J. Fac. Radiologists*, July, 1952.

Abstracts from Medical Literature.

SURGERY.

Radiohumeral Synovitis.

MOORE MOORE, JUNIOR (*A.M.A. Archives of Surgery*, April, 1952) reports 10 cases of so-called "tennis elbow" in which the lesion was due to nipping of a mucosal half-curtain or fringe arising from the lateral synovial membrane of the elbow. He states that the chief complaint is pain localized in the radio-humeral joint and noted on extension of the elbow and supination of the forearm. Resistance increases the pain. The radio-humeral joint has pin-point tenderness to pressure, which is made worse by extension and supination of the elbow. The preferred treatment in patients exhibiting this syndrome is operative removal of the thickened and probably torn synovial membrane. The procedure is easy, and the relief afforded to the patients is dramatic.

Reduction of Intussusception by Barium Enema.

M. M. RAVITCH AND R. H. MORGAN (*Annals of Surgery*, May, 1952) discuss the case for hydrostatic pressure of intussusception whether by saline or by barium enema under fluoroscopic control. They consider that the pædiatrician will more readily refer a patient to the surgeon with the possible diagnosis of intussusception when he knows that the surgeon will first administer an enema, than when he knows that the surgeon will resort to immediate operation. The mortality rate must continue to favour those patients treated primarily by barium enema, because over 70% of them will have escaped an anæsthetic and an incision with whatever incidence of complications may attend these. Also, the duration of stay in hospital of the group will be shorter when only 30% or less have had an operation. Hydrostatic pressure is less traumatic to the bowel than is manual reduction, which may be difficult and trying and may even induce pathological changes necessitating resection. The authors state that the many hundreds of cases reported by Scandinavian and Australian clinics with their outstanding results place their series of 57 cases more in the position of being merely corroborative. There have been no deaths among their patients, 42 of whom were treated by barium enema alone. In the other 15 cases operations were required to complete the reduction. In 14 of these the intussusception had been reduced to the caecum, and in one case the intussusception lay above the caecum in the ascending part of the colon. In most cases reduction was easily completed through a McBurney's incision. In only one patient was a resection performed, and in this instance sections showed œdematous and contused but eminently viable bowel. There were three recurrences in the entire group, and in all three the recurrence was reduced by barium enemas. Barium is run in by gravity from a height of three to three and a half feet. Reduction is diagnosed on the basis of free filling of the small bowel, disappearance of the mass, an obvious improvement in the child's condition, and the passage of fæces or flatus *per rectum*. If reduction is incomplete and a "negative" shadow is seen in the caecum, if the ileum does not fill, or if the concave meniscus at its leading edge can be followed into the terminal part of the ileum and the ileum then fills very slowly or only partially, the abdomen should be promptly opened through a McBurney's incision. It is suggested that even in clinics in which every child suffering from intussusception is submitted to operation, the results could be improved if operation was preceded by a barium enema, and if then, regardless of the apparent result, a McBurney's incision was made for confirmation or completion of the operation. The various objections to hydrostatic reduction are discussed at length.

Massive Hæmangiomata of the Liver.

H. WILSON AND W. T. TYSON (*Annals of Surgery*, June, 1952) state that massive hæmangiomata of the liver have been reported in patients of all ages, more commonly in women and more frequently with the left lobe of the liver involved than the right. Patients most frequently report for medical advice because of the presence of a mass, or because of pressure symptoms from the mass. The authors describe three cases of their own. One involved almost the entire liver, but two were confined to the left lobe and were successfully excised by partial hepatectomy.

Breast Carcinoma.

W. D. GATCH AND C. D. CULBERTSON (*Annals of Surgery*, June, 1952) report a study of breast carcinoma made on a clinical and pathological basis and give the following conclusions: (i) The condition spreads in many cases by blood vessels. (ii) When lymph nodes are invaded there is widespread growth in surrounding lymph vessels. (iii) Tissue resistance to growth of breast cancer is very great, and this is a big factor in checking the growth of cancer cells left at operation. (iv) Operation is likely to be performed sooner for rapidly growing cancers, that is, the more malignant, than for others; therefore statistics may show comparatively poorer results in cases in which operation is performed relatively early in the case history. (v) In some apparently normal breasts microscopic cancer can be found. (vi) Sampson Handley's theory is no longer tenable. (vii) Radical mastectomy is now justified, not by theory, but by experience.

Intestinal Intubation.

M. O. CANTOR AND E. R. PHELPS (*The American Journal of Surgery*, April, 1952) describe a further simplification of the Cantor intestinal decompression tube. This tube consists of a single lumen tube of 18 fr. lumen with two series of four elliptical holes which are placed on its sides. The balloon is made of "Neoprene" rubber in combination with "Latex", since this renders it one-fifth as permeable as pure "Latex". The balloon, which is cemented and tied to the end of the tube, is filled with five to ten millilitres of mercury. This is injected with a syringe and a 21 gauge needle, and all the air is removed from it. The perforation in the balloon made by the needle prevents over-distension of the balloon with intestinal gases, which diffuse through the rubber, but at the same time it is small enough to prevent the escape of the mercury. The authors state that rapid and successful intubation may be assured in well over 90% of all patients intubated by anyone willing to familiarize himself with the tube and with the method of intubation. The use of their tube without a perforation in the balloon to prevent its over-distension with intestinal gases may change a partial intestinal obstruction to a complete one; or in the case of balloons of a large size the bowel may be completely obstructed by it alone.

Carcinoma of Recto-Sigmoid and Upper Part of Rectum.

E. S. JUDD, JUNIOR, AND N. J. BELLEGIE (*A.M.A. Archives of Surgery*, May, 1952) present their results and recurrence rates in 282 cases of carcinoma of the recto-sigmoid and upper part of the rectum, treated by anterior resection. They conclude that abdomino-perineal excision still remains the operation of choice for carcinoma of the rectum and that anterior resection should be reserved for cases in which "adequate" removal of bowel below the growth is possible.

The Treatment of Complete Unilateral Harelip.

A. B. LE MESURIER (*Surgery, Gynecology and Obstetrics*, July, 1952) first describes the fine details of the changes in the anatomy of the nose and lips in complete unilateral harelip and discusses the principles of the operation of repair. He states that avoidance of any interference with the bone is important, and the lip and nostril should be repaired in such a way as to have them looking as normal as possible at the one operation. The attachment of the whole of the nostril wall to the framework of the face, including the cartilaginous nasal septum, must be freed thoroughly so that the parts of the nose can be brought together in their proper position. The author stresses the free dissection of the lining of the vestibulum of the nostril in order to produce with the lining of the septum and the premaxilla a nice curved floor of the cleft nostril. He states that Vean advised the repair of the cleft in the hard palate at the same time as he repaired the lip. He (the author) tried this method, but found that it interfered with the Dorrance "push-back" operation with the descending palatine vessels on both sides kept intact. Being convinced of the improvement in speech following the "push-back" operation, the author limits the first operation to repairing the lip and nose only, and he leaves the repair of the whole palate and the "push back" for a later operation. Complete details are given of the operation in its stages.

Syndrome of the Degenerated Intervertebral Disk.

NED M. SHUTKIN (*The American Journal of Surgery*, August, 1952) states that the majority of cases of so-called

idiopathic low back pain are due to intervertebral disk abnormality. He has abandoned the diagnosis of sacro-iliac strain, traumatic low back pain, lumbo-sacral sprain, postural strain and facet syndrome as an explanation of the conditions present in patients complaining of chronic or acute idiopathic low back pain with or without sciatica. The anatomical findings of various investigators are cited to show that there is disproportion between the incidence of low back pain and the incidence of degenerative processes in the intervertebral disks in comparatively young and healthy adults. Low back pain without sciatica can be and is attributable to internal derangement within the disk itself. The author presents evidence in such cases of displacement of nuclear material with possibly secondary hæmorrhage and inflammatory changes. He discusses the classical signs and symptoms of the syndrome and their dynamics. He describes the use of "Novocain" injection into the intervertebral disk as a means of establishing the diagnosis in the equivocal case. He states that the treatment of the patient with the syndrome of the degenerated intervertebral disk is predominantly but not invariably conservative.

Meconium Peritonitis.

I. FORSHALL, E. G. HALL AND P. P. RICKHAM (*The British Journal of Surgery*, July, 1952) state that meconium peritonitis is a chemical or foreign body peritonitis produced as a response to the presence of meconium in the peritoneal cavity. The condition is essentially non-infective, but infection by pyogenic bacteria may occur secondarily. The meconium can enter the peritoneal cavity only as a result of perforation or rupture of meconium-containing bowel. Meconium has already started to accumulate in the intestine of the three-month embryo. Therefore, theoretically it is possible for meconium peritonitis to occur early in fœtal life, and Rudnew reported the condition in a six-month fœtus. The authors describe in great detail the findings in three cases; one of the patients recovered, the others died. The cause of the obstruction was a volvulus in one instance, atresia and volvulus in the second, and meconium ileus and atresia in the third. In no case was the site of the rupture or perforation found. It is of interest that the sign described by Neuhauser—mainly calcification in the plain X-ray film—is seen in a proportion of cases only. The calcification may be so early that while it is not evident in X-ray films of the infant's abdomen, it can be seen in X-ray films of the removed specimen.

Scars Remaining in Atom Bomb Survivors.

WARNER WELLS AND NEAL TSUKIFUJI (*Surgery, Gynecology and Obstetrics*, August, 1952) reexamined 63 survivors of atom bomb explosions at Hiroshima and Nagasaki after an interval of forty-eight to fifty-four months. They state that there was a relatively high incidence of scar keloid and hypertrophic scar formation of a severe degree. Inadequate treatment, poor nutrition, high incidence of severe infection and delayed healing were considered as important contributing factors which affected the healing process to result in a high incidence of severe keloid or scar formation. Scar keloids were found to occur in Japanese sustaining burns from other causes than the atomic bomb. It is probable that scar keloids represent no peculiar effect of the atomic bomb explosion. Improvement, most of it spontaneous, occurred in many of these patients after a lapse of four years. Persistence of keloids has been associated with infection, foreign bodies, contractures and abnormal skin tension.

The Operative Removal of Parotid Gland Tumours.

HAYES MARTIN (*Surgery*, May, 1952) states that the two cardinal principles in surgery of parotid gland tumours are (i) complete removal of the growth and (ii) avoidance of injury to the seventh nerve. He discusses the surgical anatomy of the seventh nerve, as he considers that the best way to ensure that the nerve is not damaged is to seek and find it proximally and so isolate it and keep it under vision. He uses a "Y" incision, which permits upward retraction of the ear and access to the posterior and retromandibular portions of the gland. The operative technique is described for the removal of parotid tumours with preservation of the seventh nerve.

Cysts of the Adrenal Glands.

F. HENRY ELLIS, CLYDE J. DAWE AND O. THERON CLAGETT (*Annals of Surgery*, August, 1952) have reported a series of 12 patients from whom adrenal cysts were removed. From a review of the literature the rarity of this lesion is shown. In the series reported four of the cysts were classed as "serous", three were examples of pseudocyst formation as a result of hæmorrhage and necrosis in an adrenal phæochromocytoma, and five were examples of pseudocyst formation due to cystic resolution of a hæmatoma of the gland. Of the 12 patients 6 had vague symptoms of gastro-intestinal origin, such as bloating, belching, nausea, vomiting and constipation. In five cases pain had occurred and had probably been due to hæmorrhage into the cyst. In no case was there evidence of an endocrine insufficiency. In 10 cases the tumour was palpable on abdominal examination. Because of the frequency with which the cystic mass displaced the kidney it was concluded that the most helpful single laboratory aid was an excretory urogram or retrograde pyelogram. In some cases these also revealed distortion of the renal pelvis.

Adenoma Arising in an Adrenal Cortical Rest.

D. A. OSBORN (*Guy's Hospital Reports*, Volume CI, Number 3, 1952) states that adrenal cortical adenomata are sufficiently common not to deserve special comment, and that small amounts of accessory adrenal cortical tissue are likewise not infrequently found if searched for, yet tumours arising from such accessory tissue are extremely rare. A report is given of such a case in a woman, aged seventy-two years, in whom a palpable mass had been present for twelve months, but in whom there were no other symptoms attributable to the tumour. The blood supply to the tumour was by anomalous vessels direct from the aorta. Microscopically, the structure resembled that of the *zona glomerulosa* of the adrenal cortex. The adrenal glands and ovaries were normal in appearance and position.

Post-Cholecystectomy Syndrome.

WARREN H. COLE AND WILLIAM J. GROVE (*Annals of Surgery*, July, 1952) call attention to the anomalies of the ampulla of Vater and duodenal papilla as a cause of the persistent symptoms after cholecystectomy. They list the following other causes of such symptoms: lesions outside the biliary tract, stones in the common bile duct, chronic pancreatitis, enlarged cystic duct stump, biliary dyskinesia, neuromata, psychoneurosis. It is urged that when exploratory laparotomy reveals no obvious cause the duodenum should be opened and the ampulla inspected. Of the two patients with anomalies reported by these authors, one had a stenosis of the sphincter of Oddi and the other had an anomaly consisting of junction of the common bile duct with the pancreatic duct by way of an opening no larger than one millimetre in diameter. Among the problems of gall-bladder surgery are mentioned the facts that on a few occasions (2% to 3% of cases) patients will have gall-bladder attacks relieved by cholecystectomy, even though cholecystography reveals a normal shadow, and that even though the absence of a shadow is almost a 100% assurance that gall-bladder disease is present, it does not necessarily mean that the symptoms are being caused by such gall-bladder disease.

Intrahepatic Biliary Obstruction.

IAN AIRD (*Annals of Surgery*, July, 1952) reports seven patients who were suffering from obstructive jaundice, but in whom were found an empty gall-bladder, an undilated common bile duct, a normal pancreas, and no visible or palpable cause of obstruction in the extrahepatic biliary passages. The absence of extrahepatic biliary obstruction was confirmed by cholangiography at the time of the operation. In four of the cases a diagnosis of Hanot's cirrhosis or cholangiolitic hepatitis was made, and three of the four patients appeared to recover completely; in one of these three cases there were grossly enlarged lymph glands deeply stained by bile pigment the like of which has not been previously described. In the fifth case there was a peculiar variety of extensive intraduct spread of a hepatoma which was responsible for the obstructive jaundice before the tumour became demonstrable in the liver at operation. In the remaining two cases xanthomatous deposits in the skin were associated with cholangiolitic obstruction.

Malignant Change in Chronic Osteomyelitis.

M. B. DEVAS (*The British Journal of Surgery*, September, 1952) reports a case in which a well-differentiated squamous carcinoma developed in the sinus of a chronic osteomyelitis of the tibia which had been present for fourteen years. He states that this change is both a rare and a late complication, such tumours are of low malignancy, and secondary spread is uncommon. In this case X-ray examination showed cavitation beneath the growth, and this was subsequently found to be due to erosion of the bone by the tumour tissue. Amputation, which is the usual treatment, was performed. The prognosis should be excellent.

Special Articles for the Clinician.

(CONTRIBUTED BY REQUEST.)

L.

THE EARLY DIAGNOSIS OF BRONCHIAL CARCINOMA.

THE first difficulty in the early diagnosis of bronchial carcinoma is to decide when diagnosis is really early. For present needs I am taking it to mean a diagnosis made while the growth is still confined to the immediate neighbourhood of its starting point. Even so, the growth, though early in the sense of being operable and curable, may be old in time, as the following case record shows.

A man, aged sixty-three years, had routine radiograms of his lungs while he was working at a tuberculosis hospital. An isolated shadow was noted in one of these, and it was assumed to be due to a tuberculous focus; it enlarged slowly during the next two years without causing symptoms. Lobectomy was performed and the lesion proved to be a carcinoma; now, two and a half years later, he remains well.

This case is cited to emphasize the fact that, with our present limited knowledge, the diagnosis at an operable stage may depend upon exploratory thoracotomy. By speaking so soon of exploratory thoracotomy I do not want to give the impression of putting last things first. Certain investigations should always be carried out, and often the diagnosis will be established before operation is undertaken. But if the results of preliminary examinations are inconclusive, a provisional diagnosis of cancer makes exploratory operation not only justifiable but mandatory.

Before discussing symptoms, signs and methods of investigation I put forward the following guiding remarks:

1. Do not ignore or belittle any abnormal radiological shadow.

2. Always have in mind the possibility of cancer of the bronchus when commonplace symptoms, such as cough, persist without good cause. The less we speak about "smoker's cough" the less likely are we to overlook bronchial cancer.

3. Do not reject the diagnosis of bronchial cancer because general health has not been affected, because there are few or no symptoms, or because any symptoms are intermittent and not progressive. There are no symptoms pathognomonic of bronchial cancer.

4. Frequent small hæmorrhages not due to tuberculosis or heart disease should be taken as evidence of neoplasm until proved not to be.

5. Be chary of the term "unresolved pneumonia". It may turn out to be simple delayed resolution or empyema, but often it means cancer.

6. Normal findings on bronchoscopic examination do not exclude cancer in a small bronchus beyond the reach of the bronchoscope.

7. Do not be put off by a long history. Many bronchial cancers grow slowly, and these carry a relatively good prognosis, as in the case mentioned above; here the diagnosis is not really early, but it is not too late for cure.

8. There may be no correlation between symptoms, signs and radiological appearances.

Symptoms and Signs.

In general, cancer does not produce symptoms until (*a*) it excites a reflex, (*b*) it interferes with function, or (*c*) it ulcerates.

In bronchial cancer these effects may be illustrated by (*a*) cough, (*b*) blocking of a bronchus, (*c*) hæmoptysis.

Variations in symptoms as well as in signs depend largely upon the site of the neoplasm, its rate of growth and complications.

The earliest symptoms are usually those which are common to most respiratory troubles, namely, cough, sputum, dyspnœa and discomfort.

The cough at first is usually dry and paroxysmal, but sooner or later it becomes more constant and productive, and the patient may speak of his "chronic bronchitis" or "recurring colds". The onset of a wheeze, especially if unilateral, is very significant.

The sputum varies from mucoid to purulent, depending on infection. Blood in the sputum is as serious as blood in the urine or alimentary contents and must be given the same consideration; but it occurs in only some 60% of cases of bronchial cancer, and undue stress must not be put upon its absence in a suspected case. Modern methods of examining the sputum for malignant cells have often established the diagnosis, but only an experienced pathologist's opinion is reliable.

If dyspnœa occurs early, it is often out of proportion to other clinical and radiological changes; this important point should not be missed.

Discomfort in the chest is common in many respiratory affections, but discomfort amounting to pain should always arouse suspicion. It does not mean pleural involvement in the early stage; it is apparently visceral and disappears with removal of the growth.

Pneumonia or an acute respiratory infection may be the first evidence of an underlying neoplasm. Often the patient will say that he has never been really well since the subsidence of the acute symptoms, and there may be residual signs to which, too often, the label "unresolved pneumonia" is applied.

Another mode of onset, which may still be compatible with an early growth, is the appearance of general constitutional symptoms, such as weakness, loss of energy and loss of weight; complaint of indigestion and anorexia does not necessarily mean abdominal metastases. By contrast, some patients have no constitutional symptoms long after the diagnosis has been established.

Rheumatic pains, with or without obvious hypertrophic pulmonary osteoarthropathy and clubbing of the fingers, may be early symptoms, but in my experience they usually point to a growth that is late although not necessarily inoperable.

Physical signs are as variable as the symptoms and like them depend on the site of the neoplasm, its rate of growth and complications.

Radiology.

The radiological appearances may be correlated with the two main topographical types: (i) A growth arising in a large bronchus—that is, a main, lobar or segmental bronchus. Relatively early it may cause hæmorrhage and bronchial occlusion. (ii) A growth arising in a smaller bronchus. It tends to form a well localized mass in the lung substance with few or no early symptoms.

The radiological appearances due to a growth in a large bronchus depend, at first, on the degree of obstruction. Very early the skiagram may be apparently quite normal; later there will be evidence of localized emphysema or atelectasis or pneumonia, depending on whether the obstruction of the lumen is complete or incomplete and whether or not there is secondary infection. It is only relatively late in this group that the growth itself will cast a shadow.

With a growth in a smaller bronchus, there is early encroachment on the lung parenchyma, and this will show as a radiological opacity; secondary changes will not be apparent until later.

Tomograms, in the earliest phases, may be of help by showing bronchial obstruction, and by accentuating the shadow of the growth which may not be apparent in a standard film.

Bronchograms also may show the block and are especially useful where the bronchus involved is a small one beyond the reach of the bronchoscope. It is, of course, essential to take lateral as well as postero-anterior pictures.

Although skiagrams are indispensable they are rarely conclusive, and similar pictures may be due to tuberculosis and other infections, innocent neoplasms, foreign bodies and aneurysms.

Bronchoscopy.

As already noted, skiagrams at an early stage may appear normal, and the only positive findings may be those of bronchoscopy. This is most likely to happen when the only symptom has been hæmoptysis occurring very early. But as the growth arises in an accessible bronchus in only about one half or less of the cases, normal bronchoscopic findings are not exclusive. If a growth is seen at bronchoscopy, some tissue is taken for biopsy, and careful note is made of its

anatomical level and of any secondary changes, such as rigidity of the bronchial wall, submucous infiltration above it or widening of the spurs between bronchi.

As a means of early diagnosis bronchoscopy should be performed for any suggestive symptom for which there is not some obvious explanation, such as persistent cough, wheeze or hæmoptysis, for infections with any unusual features and for many cases of "unresolved pneumonia".

Exploratory Thoracotomy.

In the end exploration may be the only means of making an early diagnosis, and it should not be undertaken without delay once the need for it has been accepted. The only indication may be an undiagnosed radiological opacity. At operation a distinct "lump" is usually found, and even if this is not a growth it is generally some lesion that requires surgical removal, such as tuberculoma, hydatid cyst, actinomycosis, torula or chronic abscess.

The greatest problem for the surgeon may be to decide the extent of the resection. If inspection and palpation are inconclusive, immediate examination of a frozen section may be decisive.

M. P. SUSMAN,
Sydney.

British Medical Association News.

SCIENTIFIC.

A MEETING of the New South Wales Branch of the British Medical Association was held on September 18, 1952, at Sydney Hospital. The meeting took the form of a series of clinical demonstrations by members of the honorary medical staff of the hospital. Part of this report appeared in the issue of January 24, 1953.

Cerebellar Disorder.

DR. C. B. HUDSON showed a boy, aged thirteen years, who had first been admitted to hospital on August 31, 1951. Ten days previously he had become flushed and complained of running from the nose, anorexia, headache and excessive sleepiness. Nine days later he began to slur his words and twitch at the mouth; his left eyelid drooped, he was unsteady on his feet and his hands were clumsy. In 1949 he had had measles with delirium, and was unsteady on his feet for two months afterwards; he had no slurring of speech at that time. In May, 1950, he had been admitted to the Royal Alexandra Hospital for Children with a diagnosis of rheumatic fever. After his discharge he was well, except for slight slowness of movement and a tendency to drag his right foot. He also complained of occasional giddy turns. There was no family history of a similar complaint.

On examination on August 31, 1951, the patient was afebrile. He walked on a broad base and tended to fall to the right. Rombergism was present and his speech was slightly slurred. His fundi were normal, there was no nystagmus and the cranial nerves were otherwise intact. No neck rigidity was present, and motor power was normal. He made no abnormal movements and there was no muscular wasting. The lower limbs were hypotonic, and coordination of all limbs was impaired. Past-pointing was present. Sensation was normal in all respects. The tendon reflexes in the upper limbs were normal. Both knee jerks and ankle jerks were absent. The plantar responses were flexor; the abdominal reflexes were present. His pulse rate was 80 per minute, and the pulse was regular. The systolic blood pressure was 130 millimetres of mercury and the diastolic pressure 85 millimetres. The apex beat was in the sixth left intercostal space outside the nipple line. A harsh mitral systolic murmur was present. The pulmonary second sound was accentuated.

A number of special investigations were undertaken. An X-ray examination of the chest revealed a slight increase in the transverse diameter of the heart. No cells were seen in the cerebro-spinal fluid, which contained 30 milligrammes of protein per 100 millilitres; the colloidal gold test produced a negative response. The Wassermann and Kahn tests produced negative results. An electroencephalogram was normal.

During the patient's stay in hospital he was afebrile, but little improvement in his condition occurred. He was discharged from hospital on September 16, 1951; he still had considerable slurring of speech and ataxia of all limbs. Dr. Hudson said that since the boy's discharge from hospital his condition had gradually deteriorated. He had had several dizzy spells and had fallen. He did not lose consciousness. The provisional diagnosis was encephalitis with predominant cerebellar involvement.

Striatal Disorder.

Dr. Hudson's second patient was a man, aged forty-one years, who had been admitted to hospital on August 6, 1951, suffering from a striatal disorder with myoclonic features bearing some resemblance to *paramyoclonus multiplex*. The condition was thought to be chronic encephalitic myoclonus. He had lost two and a half stone in weight in the five years before his admission to hospital. For twelve months before his admission he had noticed "nerves", characterized by inability to keep still; he made gross movements (twisting of the neck, shrugging of the shoulders, pursing of the lips, abducting of the hips, shock-like twitchings of the whole arm); he had never noticed the occurrence of fine twitchings or writhing movements. For the past two months his hands had become cold and white in cold weather; the condition was relieved by warm water. In the last six months he had had difficulty with speech; he knew what he wanted to say, but could not make others understand. There was no relevant previous history and no history of familial nervous disease.

Examination of the patient showed him to be making multiple involuntary movements involving the mouth, neck, shoulders and abdominal wall, and particularly the fingers, wrists and ankles. There were some definite "pill-rolling" movements of the fingers. The movements were mainly gross, the joints being moved. Coarse fasciculation was also noted in the muscles, especially the biceps and quadriceps. The gait was unsteady, but that condition appeared to be due to disturbance of the balance by sudden shock-like contractions of the muscles, rather than to true ataxia. The speech was much slurred. The mental faculties were not impaired, and the cranial nerves were intact, apart from the speech defect. Palatal movements were normal, and the fundi were normal. Muscle tone was increased; all tendon reflexes were hyperactive; the plantar reflexes were flexor. All forms of sensation were intact. No Rombergism was present. No significant abnormality was detected in the other systems, and the urine was normal. The cerebro-spinal fluid was normal. X-ray examination of the chest revealed no abnormality. The serum calcium content was 9·2 milligrammes *per centum*, the serum phosphorus content was 3·0 milligrammes *per centum*, and neither the blood serum nor the cerebro-spinal fluid reacted to the Wassermann or Kline test. X-ray examination of the skull and an electroencephalogram revealed no abnormality. Dr. Hudson said that since the patient's discharge from hospital he had taken one drachm of "Elixir Myanesin" four times a day, and the muscular spasms had been much less evident.

Exophthalmic Ophthalmoplegia.

Dr. Hudson finally showed a male patient, aged forty-three years, who had first been examined at the hospital on November 7, 1950, when he complained of swelling of the thyroid gland of three years' duration, and of tremor of the hand of six months' duration. He had been gaining in weight and felt well.

On examination of the patient, it was seen that he had slight right-sided exophthalmos, slight diffuse thyroid enlargement, and a fine tremor of the hands. His pulse rate was 92 per minute, his blood pressure was 130 millimetres of mercury, systolic, and 80 millimetres, diastolic, and no abnormality was detected in the heart. On November 20 his basal metabolic rate was +15%.

He was treated with thio drugs ("Meprocil" tablets). A month after treatment had begun his weight had increased, the tachycardia had subsided and the goitre had become larger. He was then given thyroid tablets, and under that treatment the thyroid swelling partially resolved. On July 31, 1951, all treatment was suspended.

In January, 1952, he was well and his thyroid swelling and exophthalmos were less evident. In May he was well, but said that his right eye varied in prominence from day to day. In August he reported that his right eye was more prominent, and that he saw double when looking to the left. It was noted, on examination of the patient, that the right eye lagged behind the left when both eyes were turned to the left. On August 14 the blood cholesterol

content was 276 milligrammes per 100 millilitres of serum. On August 19 an X-ray examination revealed no abnormality in the skull or optic foramina. On September 2 the basal metabolic rate was +1%.

Some Aspects of Twins.

DR. A. T. EDWARDS showed photographs of three pairs of twins: (i) left-handed twins, (ii) right-handed twins, (iii) twins aged three years. The twins' faces were cut in halves and the halves were interchanged to form composite pictures. Each composite picture represented one-half of one twin and one of the other twin. Dr. Edwards said that the following working concept had been used: (*a*) each half of the face represented a separate and independent functional unit; (*b*) one-half of the face dominated the other; (*c*) the dominating half of the face corresponded to the dominating hand, and so with right-handed people the right side of the face dominated and in left-handed people the left side. An attempt was made to illustrate that concept by the demonstration of composite pictures. In the case of right-handed twins the composite picture was similar to that of the twin the right part of whose face was represented in the picture. In the case of left-handed twins the composite picture was similar to that of the twin the left part of whose face was represented in the picture. The composite picture of the twin children showed similarity to either of the twins.

Right and left profile pictures of each pair of twins were also taken. In right-handed twins the left profile showed more similarity and the right profile more individuality. In left-handed twins the position was reversed.

Dr. Edwards said that the suggested explanation of the findings was that in right-handed persons there were better innervation, sensitization and emotionalization of the muscles of the right side of the face. With biological growth those persons acquired more individual behavioural patterns in the right side of the face, and it started to represent their individuality. Therefore the composite picture with the right part of the face and the right profile was more "individual". The position was reversed in left-handed persons, and there was no individualization in children until they started to grow and engrave the behavioural patterns on the face.

Compulsory Laughter.

Dr. Edwards then discussed the case of a woman, aged forty-eight years, who had come under observation about ten months after a cerebral hæmorrhage to the pontine region, the residual effects of which were paralysis of the left side of her body with involvement of her mouth and speech. The last-mentioned faculties returned after a month or so. The patient was confined to bed for three months and gradually regained enough strength to move about the house. About that time the patient developed attacks of compulsory laughter, which caused her great embarrassment when in company and resulted in a desire to avoid personal contacts. The main characteristics of that compulsory laughter were as follows: (i) It was excessive in duration and intensity. (ii) It was not accompanied by appropriate emotion, but rather experienced as unpleasant. (iii) It was impossible or very difficult to suppress. (iv) It was excited by special stimuli, like the appearance of strangers, being shaken on the bus, bereavement and so on. (v) When suppressed, it produced tension and anxiety reactions. Dr. Edwards showed several photographs illustrating the provoking stimulus (strangers) and the suppressing mechanism (moving the hands towards the face).

Dr. Edwards said that the hypothetical laughing centre was probably situated in the thalamus or hypothalamus or in the cortico-bulbo-cerebral reflex pathways. Stimulation or inappropriate stimulation of those centres could produce the compulsory act, but also impairment of controlling cortical mechanisms could have the same effect. Clinically the causes of the stimulations were various, and compulsory laughter might occur in the following lesions: (i) frontal lobe tumours; (ii) mid-brain and stem lesions (arteriosclerosis, bulbar palsy, lateral amyotrophic sclerosis, disseminated sclerosis); (iii) irregular discharges of epilepsy and epileptic equivalents; (iv) Jacksonian motor and sensory fits; (v) mental conditions (mania, mental deficiency, hysteria). The prognosis was poor and the treatment was usually not effective.

Tremor and Mental Defect following Birth Injury.

DR. B. H. PETERSON showed an unmarried female patient, aged sixteen years, who on July 30, 1952, had been referred from the disabled persons section of the Commonwealth Employment Service for psychiatric advice regarding suitability for employment. Her mother reported that the patient had suffered from tremor of both hands since birth, and that in June, 1952, she had lost her first job after only one week because of the tremor, which made her too clumsy and slow to do the simple unskilled factory work required of her. Since the menarche at the age of twelve years, the tremor had always been much worse during her menses. She showed pronounced anxiety when asked to perform tasks with her hands, stayed at home, had few friends and was dependent on her mother. Often she was irritable and difficult to handle. The mother said that she had had hæmorrhage *per vaginam* for six months prior to the patient's birth, which was a difficult instrumental delivery. The labour lasted four days, and the patient's birth weight was seven and a half pounds. She was anæmic, and spent her first ten weeks in a mothercraft home. She walked and talked during her third year, but could not feed herself until her sixth year. She attended the Royal Alexandra Hospital for Children during most of her early childhood, requiring orthopædic treatment for her lower limbs, and the mother was told that the tremor of the hands was due to injury to the brain at birth. The patient did poorly at school, which she left at the age of fifteen years when still in sixth class. There was no history of enuresis or fits, and no family history of similar tremor. A younger step-brother was reported as normal.

On examination of the patient on July 30 she had a coarse tremor of both hands, noted mainly when she was nervous or attempting purposive movements. The tendon reflexes in both upper and lower limbs were much exaggerated, the abdominal reflexes were absent, and the right plantar reflex was equivocal. Coordination was fairly good and the gait normal. There was no "intention" tremor. Examination of the other systems, the urine and the fundi revealed no abnormality. Her mental age was nine years ten months and her intelligence quotient 66 (Terman and Merrill).

Dr. Peterson said that the patient required further investigation, but the provisional diagnosis was that her mental defect and congenital tremor were due to brain injury at birth, and that the tremor was being intensified by an emotional "overlay". Her parent and sibling relationships needed adjustment, and it was significant that her tremor had been much relieved by mild sedation during her menses. It was proposed to give her occupational therapy and simple psychotherapy as a prelude to placement in a simple unskilled job (such as sorting and brushing in the laundry or dry-cleaning trade), though it was realized that she would be difficult to absorb into the present social and economic set-up.

Behaviour Changes following Head Injury.

DR. O. SCHMALZBACH presented two patients who showed changes in behaviour after head injury.

The first patient was a man, who had been admitted to Sydney Hospital on January 22, 1952. He gave a history of having fallen 15 feet onto his head and back. He complained of pain in the back and of frontal headache. X-ray examination revealed the following fractures: (i) a fissured fracture of the left parietal bone, extending into the occipital bone; (ii) fractures of the first to fifth left transverse processes; (iii) fractures of the eighth, ninth and tenth left ribs. Examination of the central nervous system revealed anæsthesia over the right side of the forehead and face down to the distribution of the first cervical nerve; the other cranial nerves were intact. No abnormality was detected in the reflexes; the plantar reflex was flexor in type. There was no motor paralysis, and the optic fundi were normal. Slight ataxia was present, due rather to poor concentration than to cerebellar incoordination. The blood serum failed to react to the Wassermann test. About four millilitres of heavily blood-stained cerebro-spinal fluid were received for examination. The supernatant fluid was xanthochromic. The fluid contained 58,000 erythrocytes per cubic millimetre, and the leucocyte content was within normal limits. Culture produced no growth of micro-organisms. The protein content was 150 milligrammes per 100 millilitres (70 milligrammes per 100 millilitres when correction was made for the presence of blood). The sodium chloride content was 730 milligrammes per 100 millilitres. Routine X-ray examination of the chest revealed slight left ventricular hypertrophy, but no active lung lesion.

The patient attended the neurology clinic and was under the care of Dr. Scott Charlton in May, 1952; but lumbar puncture and an electroencephalographic examination revealed no cause for his recurrent headaches. A pneumoencephalographic examination on August 5 revealed diffuse cerebral atrophy, but no space-occupying lesion. An osteoma of the frontal sinus, not requiring surgical treatment, was found. Further investigation of the cerebro-spinal fluid at that time revealed no abnormality.

The behaviour changes noted were as follows. According to the patient's wife, "before the accident patient was very peaceful, he was not bad tempered and even used to buy me little things", but "since he has had the accident I can't do anything right". The patient said that he had noticed in the last few months that he had been irritable, had had difficulty in "remembering things", and very often had arguments with his wife, which apparently did not happen before the accident. The patient's wife gave a long story of behaviour changes in the patient since the accident. The history was difficult to evaluate objectively, since the patient had been claiming compensation in connexion with the accident. The atrophic changes in the frontal lobes shown in the X-ray films could explain a great deal of his personality change.

The social history, obtained by the almoner, Miss K. George, from the patient's wife, was possibly inaccurate, as in view of the impending court case the wife was anxious to show how the patient had changed since the accident. Little was known of the patient's early life. There were three children of his first marriage, the eldest being aged eighteen years; the wife had apparently deserted him while he was in the army. He had remarried six years prior to coming for examination; there were two children of the marriage, which seemed to be happy. One child had been in an institution for delinquent boys. The patient had worked for twelve years as a labourer on the roads, and for the past six years as a wharf labourer. Three weeks prior to examination he had returned to work on the wharves, packing and pushing small trucks of cargo. His wife maintained that the patient had changed completely over the past few months. Whereas he had previously enjoyed a normal social life, he had now lost all interest in outside activities and simply sat about the house. He had become extremely irritable and brooded for a long time over disagreements with his wife. He tried to take an interest in his garden, but found difficulty in concentrating. However, his general condition had improved greatly since his return to work, and he was far less irritable and moody.

Dr. Schmalzbach's second patient was a man, aged forty-one years, who had fallen off a motor-lorry onto the back of his head in February, 1951, and had been unconscious for a short period after the injury. He recovered consciousness, but was in a stuporose state for some hours afterwards. Six months after the injury the patient began to have convulsive seizures of Jacksonian type. During the seizures he was conscious; his head became retracted, his face twitched, and then his hands and feet were affected. Since the accident he had complained of headache, particularly in the frontal and temporal regions ,and his vision had become blurred in the passed eight weeks. He had occasional turns of giddiness, and his sleep was poor. He had become irritable, and he noticed that memory and orientation had become poor since the onset of the seizures. His hearing was unaffected. He had undergone an appendicectomy fourteen years earlier and an operation for cardiospasm in 1951. There was nothing relevant in his family history, and he drank alcohol and smoked in moderation.

On examination of the patient, the cranial nerves were found to be intact. No papilloedema was present, and there were no sensory disturbances. The reflexes were normal; the plantar reflex was flexor. There was no neck stiffness, and Kernig's sign was absent. The pulse was regular, and there was no peripheral œdema; no murmurs were detected. Angiograms of the left and right carotid arteries were normal. Pneumoencephalography was carried out. About 25 millilitres of air were injected by lumbar puncture. An X-ray examination revealed dilatation of the ventricles and some shift to the right. A full blood count revealed no abnormality. The Wassermann test failed to produce a reaction. The protein content of the cerebro-spinal fluid was less than 20 milligrammes per 100 millilitres, and no cells were seen.

The behaviour changes recorded were based on the patient's history only. The patient, like the previous patient, was claiming compensation, and because of that his account had to be considered critically. His main complaint was defect in memory, irritability, and at times affective lability. The patient had married eleven years earlier and had five living children. The marriage was said to be happy; the wife was the dominant partner, and had always taken the major responsibilities of the family. The patient had a varied employment history. As a result of the financial depression he had done relief work until 1939, when he enlisted in the army; he was discharged medically unfit after thirteen months' service, six months of which he had spent in the Middle East. Since then he had had numerous jobs, mainly as an unskilled labourer, although he had been employed as a tram conductor for two years. He said that he mainly left the jobs because he found it difficult to accept authority. In June, 1950, he had begun his present job as a labourer. Since his accident, owing to his continual "fits", "headaches" and inability to lift heavy tools, the rest of his gang tended to "carry" him. He had become socially withdrawn and had lost interest in outside activities. He had become extremely irritable generally, and could not stand the children's noise; although he had never been very patient with the children, now the younger ones were too frightened to go near him. Whereas formerly he read a great deal, he was now unable to concentrate, and even newsprint became blurred quickly.

Dr. Schmalzbach said that it was known that post-traumatic symptoms might be related to structural lesions of the brain, or might be psychogenic. The commonest mental symptoms were those of anxiety neurosis, including hypersensitivity, periodic irritability, fatigue and disturbances in sleep. Coma and post-traumatic amnesia were evidences of disturbances of consciousness immediately after the head injury. Post-traumatic headache and dizziness, as in both the cases presented, were often associated with mental symptoms, particularly when they lasted for more than two months. The X-ray evidence of fracture of the skull was not necessarily a condition for the incidence of post-traumatic mental symptoms. The same could be applied to abnormal electroencephalographic findings. The high incidence of mental symptoms was correlated with occupational difficulties and particularly with compensation claims, as various authors had stated. Despite the patient's unstable work record, he seemed to have been a fairly adequate individual before his head injury. However, it appeared that since the accident a considerable deterioration had taken place in his personal relationships, his personality generally and his capacity to work, though it was obviously difficult to assess the extent of the change that had taken place.

Translumbar Aortograms in Urological Diagnosis.

DR. IAN POTTS showed some translumbar aortograms demonstrating various renal lesions. The first showed an ectopic right kidney overlying the right ala of the sacrum. The aortogram demonstrated four aberrant renal arteries, and the nephrogram showed clearly the outline of the organ. In three cases aortograms clearly outlined aberrant renal arteries. In two of the cases the aortogram was combined with a retrograde pyelogram, and it was seen that the aberrant vessel crossed the pelvi-ureteric junction and presumably was the cause of obstruction. The patients had been submitted to operation and the findings confirmed.

A hypoplastic kidney in a hypertensive patient was seen in the aortogram to have a poor blood supply, and in the nephrogram to cast a poor dye shadow. The nephrectomy specimen had been injected via the renal artery and had given a similar appearance to that shown in the aortogram.

Aortograms from three cases of carcinoma of the kidney were shown to demonstrate the typical vascular pattern, which was characterized by pooling and puddling of dye in the tumour spaces, diffuse haziness of the tumour, and a disorganization of the normal vascular pattern. The nephrograms showed retention of the dye and continuance of the puddling effect.

Lastly, Dr. Potts showed aortograms of a patient with a horseshoe kidney whose pyelograms were inconclusive. In the nephrogram could be well seen the renal isthmus crossing the front of the vertebral bodies.

Economic Aspects of Illness.

The Almoners' Department presented a poster and written statement illustrating economic aspects of illness. The example taken was that of a married man with children who must stop work because of illness. The following problems were discussed: (*a*) provision for himself, his family and his home during his illness; (*b*) the cost of his medical care and the means of meeting it.

An outline was presented of sources from which financial help was available to sick and disabled persons. It referred to such matters as sick pay, compensation, and statutory and voluntary benefits. The almoners' comment was that, despite those provisions, loss of work because of illness almost invariably caused a drastic reduction in income, and that if the disability was prolonged or permanent, the family might suffer deprivation. In such cases the assistance of an almoner was often required.

An outline was presented of the cost, and the patient's means of obtaining the following requirements: general medical practitioner care, medical specialist care, pathological and X-ray examinations, drugs, nursing care, household help, medical equipment, surgical appliances, ancillary services, such as transport, physiotherapy, occupational therapy and social case work. Those matters were discussed in respect of the patient who remained at home, the patient who needed admission to an "acute" hospital, and the patient who needed institutional care in a convalescent home or hospital for the chronically ill. The almoners' comment was that, though medical and social services were reasonably adequate to the needs of most sick and disabled people, there was a serious shortage of public hospital accommodation, especially for people with chronic or incurable illnesses, and of suitable institutions for infirm elderly people who had no family to care for them. The cost of private hospital and trained nursing care in the home for such people was prohibitive, and there was a need for further provision of ancillary services for chronically ill patients in their homes.

Copies of the statement are available from the Almoners' Department, Sydney Hospital.

Varicose Ulcers Treated by a Technique Based on That Originally Described by Bisgaard.

MISS E. INGLIS, of the physiotherapy department, showed three patients, two of whom had had ulcers for long periods (fifteen to twenty years), and the third for about six months. Their condition had not been improving under treatment. After the institution of treatment based on Bisgaard's technique, one patient's ulcer had healed about a week before the meeting. She had commenced treatment on May 6, 1952. The other two, whose ulcers were about half the original size and were still decreasing, had begun treatment on June 24 and August 5, 1952, respectively. A record of their progress had been kept by means of a series of tracings of the ulcer on "Cellophane".

The treatment was described in the following terms. The patient attended the department twice a week for treatment. The whole of the leg was massaged with a non-irritating cream (calamine cream was used). The ulcers were dressed with 16 thicknesses of gauze soaked in 0·01% solution of aluminium acetate. A non-absorbent cotton wool pad was placed over the gauze dressing. A small ball of cotton wool was placed behind each malleolus and a thin strip round the foot just behind the toes and round the leg just below the knee; they were held on by a loose gauze bandage. The whole leg was firmly bandaged from behind the toes up to just below the knee joint, with an elastic bandage which was worn all the time the patient was out of bed. The patient was told to change the aluminium acetate dressings twice a day and to walk four miles a day. Patients were supplied with bottles of aluminium acetate 0·1% solution (they diluted it to 0·01% strength themselves) and gauze dressings folded to 16 thicknesses.

Occupational Therapy.

MISS J. BROWN, occupational therapist in charge, presented a demonstration in the form of a graded programme of treatment in three sections, A, B and C, showing how occupational therapy was an aid to physical recovery. The patient was a man who had sustained a fracture of the left radius eighteen months earlier. After a long period with the limb in plaster no union occurred and the fingers became grossly stiffened. A bone grafting operation was performed, but a fracture occurred through the site of the graft. One month prior to the meeting the arm was immobilized and a second grafting operation was performed. At that stage occupational therapy was prescribed to prevent any further stiffening.

A. The patient with the arm in plaster worked at macramé knotting. The necessary equipment and approach to the work were so adapted as to encourage flexion at the interphalangeal joints.

B. Miss Brown pointed out that when the plaster was first removed, a light activity would be essential. It was anticipated that weaving (as demonstrated) on a loom equipped to promote flexion extension at the wrist joint, supination and pronation, and extension at the elbow joint would be a satisfactory occupation for the second stage of treatment.

C. For the final stage of recovery, it was shown how the patient would work at stool seating. That activity would assist in the development of the maximum range of movement and strength of the affected limb.

Thoracic Diseases.

The staff of the pulmonary clinic (DR. W. L. CALOV, DR. F. L. RITCHIE, DR. A. B. S. HOGAN and DR. M. F. DECK) discussed a series of patients.

Isonicotinic Acid Hydrazide.

The staff of the pulmonary clinic, together with DR. H. M. WHYTE (clinical research fellow) and DR. G. JOHN (bacteriologist), showed a scheme for the clinical evaluation of a drug (isonicotinic acid hydrazide) in the treatment of pulmonary tuberculosis. Patients selected for the test were middle-aged and elderly people with extensive and open disease. Each alternate patient was given the drug in tablet form, the others being given tablets similar in appearance, but containing an inert substance. Only the medical officer in charge of the records (Dr. H. M. Whyte) knew which patients received the drug and which the inactive tablets. Cultures of organisms from the sputum of all patients were tested regularly for sensitivity to the drug. The following instructions were given to the patients in the test:

Instructions to Patients—

We have decided to give you a course of treatment with these tablets. The course will last at least two months. To help us decide what is the best dosage for you and how much good they are doing you, you should follow these instructions.

1. Take the tablets regularly in the number ordered.

2. If you have any upsets report them to us. We may need to alter the number of tablets you take. Don't alter the number without asking us.

3. Keep your appointments. These will be fairly frequent at first.

4. Each time you come to see us bring (*a*) your box of tablets, and (*b*) your bottle containing all the sputum you coughed up during the previous whole day (24 hours).

Pulmonary Clinic,
Sydney Hospital.

At the time of the meeting insufficient data had been collected to warrant the expression of an opinion on the qualities of the drug. The staff of the pulmonary clinic expressed the wish to obtain greater numbers of patients for the test.

Pulmonary Tuberculosis.

A married female patient, aged twenty-nine years, attended at the pulmonary clinic on July 24, 1951. Some three and a half years earlier she had been found to be affected with pulmonary tuberculosis at the time of the death of her son, aged five years, from tuberculous meningitis. She had received considerable institutional treatment. She had been well for the previous two and a half years, but recently had lost a little weight and suffered from morning cough with sputum. She had had no hæmoptysis. She was in good general condition. Clinical signs of active disease were present on the left side of her thorax.

X-ray examination revealed a large air-containihg space in the left upper zone. Some doubt was felt as to whether this was due to a pneumothorax or a cavity. Tubercle bacilli were recovered from the sputum.

Over the succeeding twelve months the patient was examined at regular intervals. The X-ray appearances were constant except for the occasional presence of what appeared to be a fluid level. She was admitted to hospital on August 30, 1952. At operation on September 9, Dr. M. P. Susman removed the upper lobe of the left lung. At the same time he removed the greater part of all the ribs from the first to the fifth. The diseased lobe was found to consist of a shell of consolidated tissue, enclosing a huge tuberculous cavity. The patient made a satisfactory recovery from the operation.

Multiple Myeloma.

A married woman, aged seventy-two years, presented on December 12, 1950, with a painful lump in the breast, which had been present for four months. During that period the lump had increased in size and become more painful. A sharp pain developed in the same area, which was made worse by coughing and deep breathing. There were no general symptoms, and the patient's past history was irrelevant.

On examination of the patient, a hard swelling two inches in diameter was found attached to the fourth rib and costal cartilage. The remainder of the physical examination revealed no abnormality. A full blood count gave the following results: the erythrocytes numbered 3,580,000 per cubic millimetre and the hæmoglobin value was 10 grammes *per centum*; the leucocytes numbered 5700 per cubic millimetre, 72% being neutrophile cells, 20% lymphocytes and 8% monocytes. The blood sedimentation rate was six millimetres in one hour.

On January 2, 1951, an X-ray examination revealed multiple rounded translucent areas in the calvarium, typical of multiple myeloma. Excretion pyelography revealed that the right kidney was normal and that there was little function in the left kidney. Bence-Jones proteose was present in the urine. Investigation of the blood chemistry gave the following information: the total protein content of the serum was 5·4 grammes per 100 millilitres, the albumin and globulin contents (per 100 millilitres) were 4·0 and 1·1 grammes respectively, and the albumin-globulin ratio was 3·8:1·0. The blood calcium content was 13·0 grammes *per centum*. Examination of material obtained by sternal puncture revealed a large number of plasma cells. The patient died on April 14, 1951.

Hodgkin's Disease.

A female patient, aged sixteen years, had attended the pulmonary clinic first on April 18, 1950, with a complaint of cough for a period of six weeks and fever for a period of three weeks. She had very little sputum. She had had hæmoptysis on 20 occasions. She had lost only a few pounds in weight. Her physique and nutritional state were good. Her general appearance was healthy. Large glands were palpable above each clavicle; they were discrete and mobile. Her chest expansion was good. Dulness to percussion was noted to the left of the sternum in the second intercostal space and also over the *manubrium sterni*. X-ray examination revealed a huge mediastinal mass. Her hæmoglobin value was 9·2 grammes *per centum*; the leucocytes numbered 9800 per cubic millimetre, 76% being neutrophile cells, 3% eosinophile cells, 0·5% basophile cells, 6% lymphocytes, and 14·5% monocytes. Histological examination of a gland removed from the neck showed evidence of Hodgkin's disease.

The patient was admitted to hospital. For several weeks she was very ill, with high fever of the Pel-Ebstein type. She was subjected to deep X-ray therapy, with the result that the mediastinal mass contracted to such an extent that it was no longer obvious on X-ray examination. The cervical swelling disappeared. In due course she returned to work. She remained well.

On September 11, 1952, she reported that she tired easily and had some difficulty in swallowing. X-ray examination revealed some extension of the mediastinal shadow into the left hemithorax. No glands were palpable in the neck or axilla or groins. The spleen was not palpable. A further course of deep X-ray therapy was prescribed.

Bronchogenic Carcinoma.

A male patient, aged eighty-four years, a gardener, for six months prior to presentation had noticed increasing dyspepsia with loss of weight. More recently he had had a diminishing appetite and nausea after food. He had been investigated for carcinoma of the stomach, with a negative result.

On examination of the patient, considerable weight loss was obvious. He was very pale. Diminished air entry was found at the right apex, with a dull percussion note. No glands were palpable, and there was no apparent secondary spread.

A number of investigations were undertaken. Blood examination revealed that the hæmoglobin value was 10·5 grammes *per centum*; the leucocytes numbered 12,000 per cubic millimetre, 83% being neutrophile cells, 1% eosinophile cells, 9% lymphocytes and 7% monocytes. The leucocytes were mature, and toxic changes were present. The anæmia was microcytic and hypochromic. The blood sedimentation rate was 102 millimetres in one hour. X-ray examination by means of a barium bolus revealed a hold-up at the lower end of the upper third of the œsophagus, probably due to extraœsophageal obstruction. It was thought that the underlying disease was probably carcinoma of the œsophagus or the lung.

Three weeks later the patient suffered from pain in the upper part of the right side of the chest, associated with an increase in the production of sputum, which was blood-streaked. Clinical improvement followed a course of penicillin therapy. The blood sedimentation rate was 80 millimetres in one hour, and the hæmoglobin value of the blood was 9·2 grammes *per centum*. Four weeks later still considerable deterioration had occurred, and the patient's voice was very hoarse from right vocal cord paralysis.

A second patient suffering from bronchogenic carcinoma was a man, aged seventy-four years, a fisherman, who had been born in Greece. He had presented on November 29, 1951, complaining of cough, shortness of breath, and the loss of one stone in weight over a period of four months. He had had no hæmoptysis, pleurisy or acute episode of pulmonary disease.

On examination, the patient was seen to be a frail-looking man, who had obviously lost considerable weight. Clubbing of the fingers was present, but there were no precise abnormal signs in his chest. X-ray examination of the chest revealed a large irregular opaque area in the right hilar region, and a further X-ray examination five days later suggested that it was in the middle lobe. No acid-fast bacilli were found in the sputum. A bronchoscopic examination on December 11 revealed a carcinoma of the right middle lobe bronchus. Examination of a biopsy specimen confirmed the presence of a bronchogenic carcinoma which had arisen from the mucus-secreting cells. Hæmoptysis developed, and the patient's condition deteriorated. He had last been examined on February 21, 1952.

A third man, aged eighty-four years, was also suffering from bronchogenic carcinoma. Originally he had reported complaining of loss of weight and "stomach trouble".

On examination, he was seen to have lost weight. His lips had a faint cyanotic tinge, and dulness and decreased air entry at the apex of the right lung were noted. On January 12, 1951, an X-ray examination revealed no lesion in the stomach or duodenum. However, considerable dulness was noted at the apex of the right lung. There did not appear to be any lung tissue at the extreme apex, and there the dulness appeared to be due to thickening of the pleura and effusion. The nature of the condition was indeterminate, but the appearance was suggestive of neoplasm.

On January 18 a right lateral film revealed dulness in the apex of the right lung. The trachea was drawn to the right, which suggested that there was some lung collapse with pleural thickening and effusion, and there appeared to be some cavity formation, which it was thought might be tuberculous. On fluoroscopic examination the first of the barium passed easily into the stomach; later there was a sudden kinking obstruction in the upper third of the œsophagus due to pressure from without. The relationship appeared to be with the fibrosis and cavitation rather than the aorta.

On February 13 a further X-ray examination revealed fibrosis in the upper lobe of the right lung, probably with a small cavity. The trachea was displaced slightly to the right. On February 26 yet another X-ray examination revealed dulness of the apex of the right lung, with displacement of the trachea to the right, suggesting a tuberculous lesion. There also appeared to be some cavity formation. The lesion seemed slightly less extensive than at the last examination. On March 20 further consolidation was seen at the apex of the right lung. The lesion appeared more defined, and further spread was obvious. The radiologist recommended that neoplasm in that area should be excluded. On May 3 an X-ray examination revealed no definite alteration.

Repeated examination of sputum failed to reveal the presence of acid-fast bacilli. The patient started to produce blood-stained sputum, and died. At autopsy bronchogenic carcinoma was found. The treatment had been purely palliative, with blood transfusions to combat anæmia.

The fourth patient suffering from bronchogenic carcinoma was a man, aged sixty-seven years, who had complained of breathlessness for three years, the production of sputum for six months, and a cough present for years. He had been a coal-miner for fifteen years

On examination, the patient was seen to have lost weight, but there were no definite signs in the chest. X-ray examination on August 19, 1952, revealed a curious and extensive well-demarcated shadow suggestive of a band of fibrosis extending from the left hilum to the apex in a fan shape. There was no apparent traction on the heart or mediastinum. A few calcified glands were present in each hilar region.

On August 28 a lateral X-ray view suggested collapse of most of the upper lobe of the left lung. A provisional diagnosis of carcinoma of the bronchus was made.

On September 2 a bronchoscopic examination was carried out, and a friable hæmorrhagic area was seen in the left main bronchus near its bifurcation. Nothing beyond this area could be seen because of the presence of blood. No stenosis was seen. The lesion resembled a carcinoma. Histological examination of a biopsy specimen revealed the appearances of squamous carcinoma.

Out of the Past.

In this column will be published from time to time extracts, taken from medical journals, newspapers, official and historical records, diaries and so on, dealing with events connected with the early medical history of Australia.

VACCINATOR AT PARRAMATTA.[1]

Colonial Secretary's Office,
Sydney,
January, 1853.

W. Bassett, Esqr.,
Parramatta.

Sir,

In acknowledging the receipt of your letter of 26th ultimo, applying for the payment of salary as vaccinator at Parramatta from the date of your commencing duty I am directed by His Excellency the Governor General to inform you that as the Legislative Council declined to provide any salary for the vaccinator at that place no pay can be issued to you in that capacity.

I have, &c.,
W. ELYARD.

Correspondence.

LEPROSY IN NAURU.

SIR: In your issue of November 20, 1952, appeared an article on "Leprosy at Nauru", which contains the following passage:

> In 1951 a rapid survey made by Austin for the South Pacific Health Service did not reveal any fresh cases of infections. . . .

Dr. Austin's visit to Nauru was, in fact, arranged for, and paid for, by the South Pacific Commission, to whom his services had been made available by the South Pacific Health Service.

I shall be obliged if you can see your way to publishing this correction in an early issue of the journal.

I am, of course, aware that the error to which I have drawn attention was derived from similar inaccuracies in the article by H. W. Wade and V. Ledowsky which appeared in *The International Journal of Leprosy*, Volume XX, Number 1. Steps are being taken to invite publication of a similar correction in that journal.

Yours, etc.,
BRIAN FREESTON,
Secretary-General.

Noumea,
New Caledonia,
January 9, 1953.

[1] From the original in the Mitchell Library, Sydney.

Medical Practice.

STANDARDIZATION OF EQUIPMENT.

Calibration of Volumetric Glassware.

THE Standards Association of Australia announces the issue for public critical review, as Document 239, of a proposal that British standard 1797:1952, Tables for Use in the Calibration of Volumetric Glassware, be endorsed without amendment as an Australian standard.

The tables facilitate the gravimetric calibration, with distilled water or mercury, of volumetric glassware intended to give volumes in millilitres at the standard temperature of 20° C. A correction table for use in the gravimetric calibration of glassware was published as an appendix to Australian standard CR. 1:1949, Use of Volumetric Glassware, but with the publication of the British tables, it is now recommended that reference instead be made to British standard 1797:1952.

Copies of British standard 1797:1952 can be examined at or purchased from the Headquarters of the Association, Science House, 157 Gloucester Street, Sydney, and from branch offices in capital cities and at Newcastle. Comments on the proposed endorsement should be sent to these offices not later than April 1, 1953.

One-Mark Graduated Flasks.

The Standards Association of Australia announces the issue for public critical review, as Document 240, of a proposal that British standard 1792:1952, One-Mark Graduated Flasks, be endorsed with slight amendment as an Australian standard.

A committee of the Association was engaged in the preparation of a draft, but with the appearance of British standard 1792:1952 it was felt that it was suitable for adoption as an Australian standard with only slight modification. The British standard specifies a range of one-mark graduated flasks suitable for ordinary laboratory requirements; only the essential details are mandatory and most of the dimensions are given for the guidance of manufacturers.

Copies of British standard 1792:1952 can be obtained from the Standards Association of Australia, Headquarters Office, Science House, 157 Gloucester Street, Sydney, and from branch offices in all capital cities of the Commonwealth and Newcastle. Comments on the proposed endorsement should be sent to any of these addresses not later than April 1, 1953.

The Royal Australasian College of Physicians.

EXAMINATION FOR MEMBERSHIP.

INTENDING candidates for the examination for membership of The Royal Australasian College of Physicians to be held in April-May, 1953, are reminded that applications for this examination close on Saturday, March 21, 1953.

Application forms may be obtained from the Honorary Secretary, 145 Macquarie Street, Sydney.

The written examination will take place in capital cities where candidates are offering on Saturday, April 18, 1953, and the clinical examination will be held in Melbourne from approximately Thursday, May 28, to Friday, May 29, 1953.

Congresses.

INTERNATIONAL CONGRESS ON MEDICAL LIBRARIANSHIP.

ARRANGEMENTS are now well advanced for the first International Congress on Medical Librarianship, which is to be held in London in July, 1953, under the presidency of Sir Cecil Wakeley, Bart., President of the Royal College of Surgeons of England. The congress is receiving widespread

support on the highest level, and enrolments have already come in from more than twenty countries. The provisional programme, now being distributed, contains the first list of honorary vice-presidents representing the chief medical libraries of the world.

The congress is being organized as a series of symposia for the discussion of such important themes as the education and training of medical librarians, the organization of new medical libraries and international cooperation. In addition to the formal sessions, a full programme of visits to medical libraries and institutions has been arranged, and the numerous social events include receptions given by the chief medical bodies in London. A cordial invitation is extended to all medical librarians, bibliographers and other interested persons to attend. Accommodation is provided in the university hostel at a very reasonable cost.

The programme, which contains forms for enrolment and for the submission of papers, together with any other information required, may be obtained on request from the Honorary Secretaries, First International Congress on Medical Librarianship, London School of Hygiene, Keppel Street, London, W.C.1.

Research.

THE WILLIAM GIBSON RESEARCH SCHOLARSHIP FOR MEDICAL WOMEN.

MISS MAUD MARGARET GIBSON has placed in the hands of the Royal Society of Medicine a sum of money to provide a scholarship in memory of her father, the late Mr. William Gibson, of Melbourne, Australia. The scholarship is awarded from time to time by the Society to qualified medical women who are subjects of the British Empire, and is tenable for a period of two years, but may in special circumstances be extended to a third year. The next award will be made in July, 1953, to date from October, 1953.

In choosing a scholar the Society will be guided in its choice either by research work already done by her, or by research work which she contemplates. The scholar shall be free to travel at her own will for the purpose of the research she has undertaken.

There is no competitive examination, nor need a thesis or other work for publication or otherwise be submitted. The Society has power at any time to terminate the grant if it has reason to be dissatisfied with the work or conduct of the scholar.

Applications should be accompanied by a statement of professional training, degrees or diploma, and of appointments, together with a schedule of the proposed research. Applications must be accompanied by testimonials, one as to academic or professional status, and one as to general character. Envelopes containing applications *et cetera* should be marked "William Gibson Research Scholarship", and should be addressed to Mr. R. T. Hewitt, Secretary, Royal Society of Medicine, 1 Wimpole Street, London, W.1, England, and be received not later than June 1, 1953.

The approximate value of the scholarship will be £200 *per annum*.

Naval, Military and Air Force.

APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Number 1, of January 8, 1953.

PERMANENT NAVAL FORCES OF THE COMMONWEALTH (SEA-GOING FORCES).

Appointment.—Surgeon Lieutenant-Commander (for short service) (Acting Surgeon Commander) Robert Michael Coplans is appointed Surgeon Lieutenant-Commander (Acting Surgeon Commander), with seniority in rank of 1st September, 1947, dated 15th November, 1952.

AUSTRALIAN MILITARY FORCES.

Royal Australian Army Medical Corps.

To be Captain (provisionally), 8th August, 1952.—NX700399 John Evan Meredith.—(Ex. Min. No. 242—Approved 19th December, 1952.)

Regular Army Special Reserve.

Royal Australian Army Medical Corps.

The following officers relinquish the provisional rank of Captain and are transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (2nd Military District) in the honorary rank of Captain: NX700396 R. F. Goulston, 16th September, 1952, NX700394 W. T. Calov, 25th September, 1952, NX700401 K. L. Cotton and NX700402 R. H. McCullough, 30th September, 1952.

The following officers relinquish the provisional rank of Captain and are transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (3rd Military District) in the honorary rank of Captain: VX700298 J. J. J. Griffin, 23rd September, 1952, and VX700301 G. R. Wigley, 2nd October, 1952.

To be Captains (provisionally).—NX700394 Walter Tom Calov, 25th August, 1952, VX700298 James John Joseph Griffin, 22nd August, 1952, VX700300 William Louther Hunter Armstrong and VX700301 Geoffrey Robert Wigley, 28th August, 1952, NX700396 Roy Frank Goulston, 1st September, 1952, NX700401 Keith Lucas Cotton and NX700402 Russell Hugh McCullough, 15th September, 1952, NX700404 John Kenmore Donovan, 22nd September, 1952, and NX700405 Colin Batson Saunders and NX700406 Robert John Burns, 29th September, 1952.

Citizen Military Forces.

Northern Command: First Military District.

Royal Australian Army Medical Corps (Medical).—1/13218 Captain J. W. Woodburn ceases to be seconded for post-graduate studies in the United Kingdom, 1st September, 1952. The provisional rank of 1/39057 Captain H. H. Chesterfield-Evans is confirmed. 1/39147 Major C. C. Wark, M.B.E., is appointed from the Reserve of Officers, 10th October, 1952.

Eastern Command: Second Military District.

Royal Australian Army Medical Corps (Medical).—2/50668 Captain (provisionally) J. F. Butler relinquishes the provisional rank of Captain and is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (2nd Military District) in the honorary rank of Captain, 28th August, 1952. 2/108162 Captain J. Cameron is appointed from the Reserve of Officers, 26th June, 1952.

Southern Command: Third Military District.

Royal Australian Army Medical Corps (Medical).—3/101802 Major R. A. Douglas ceases to be seconded for post-graduate studies in the United Kingdom, and is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (1st Military District), 26th September, 1952. 3/111027 Captain E. J. C. Claridge is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (3rd Military District), 21st September, 1952.

Western Command: Fifth Military District.

Royal Australian Army Medical Corps (Medical).—5/26397 Captain (provisionally) W. I. Gordon is seconded whilst undergoing post-graduate studies in the United Kingdom, 1st November, 1951. To be Captain (provisionally), 1st November, 1951: 5/26397 William Ian Gordon, with regimental seniority next after 5/21508 Captain (Honorary Major) M. G. F. Donnan. The provisional appointment of 5/26397 Captain W. I. Gordon is terminated, 31st October, 1951.

Tasmania Command: Sixth Military District.

Royal Australian Army Medical Corps (Medical).—The provisional rank of 6/15311 Lieutenant-Colonel (Temporary Colonel) P. Braithwaite, E.D., is confirmed.

ROYAL AUSTRALIAN AIR FORCE.

Permanent Air Force: Medical Branch.

The following Flight Lieutenants are promoted to the rank of Squadron Leader: L. A. Watson, M.B., B.S. (034058), J. F. Howell-Price, B.D.S. (023025).

Air Force Reserve: Medical Branch.

The following are appointed to commissions with the rank of Flight Lieutenant: Stanley Victor Cohen (268001), 6th June, 1952, Alan James Stitz (268003), 14th August, 1952.

Pharmaceutical Section.—Flying Officer J. E. Jacobi (435874) is transferred from the General Duties Branch, 16th August, 1952.

Australian Medical Board Proceedings.

QUEENSLAND.

THE following have been registered, pursuant to the provisions of *The Medical Acts*, 1939-1948, as duly qualified medical practitioners.

Page, Sidney William Fitzpatrick, M.B., B.S., 1952 (Univ. Queensland); Parker, Lawrence Septimus, M.B., B.S., 1952 (Univ. Queensland); Paterson, Richard Simpson, M.B., B.S., 1952 (Univ. Queensland); Pearson, Keith John, M.B., B.S., 1952 (Univ. Queensland); Percy, Roger William, M.B., B.S., 1952 (Univ. Queensland); Pixley, Ellis Charles, M.B., B.S., 1952 (Univ. Queensland); Quatermass, Malcolm Ernest, M.B., B.S., 1952 (Univ. Queensland); Richards, Shirley Maud, M.B., B.S., 1952 (Univ. Queensland); Routh, Brian Joseph, M.B., B.S., 1952 (Univ. Queensland); Rowe, William Sheffield, M.B., B.S., 1952 (Univ. Queensland); Rowland, Peter Browne, M.B., B.S., 1952 (Univ. Queensland); Shearer, Alexander Boardman, M.B., B.S., 1952 (Univ. Queensland); Sheil, Ailcie Meredith, M.B., B.S., 1952 (Univ. Queensland); Smout, Westall David, M.B., B.S., 1952 (Univ. Queensland); Souvlis, Lucas, M.B., B.S., 1952 (Univ. Queensland); Stringer, Robert Eric Charles, M.B., B.S., 1952 (Univ. Queensland); Stuart, Geoffrey James, M.B., B.S., 1952 (Univ. Queensland); Thatcher, David Adam, M.B., B.S., 1952 (Univ. Queensland); Trewin, John Scott, M.B., B.S., 1952 (Univ. Queensland); Thomas, Graham Richard, M.B., B.S., 1952 (Univ. Queensland); Uren, John Ivan, M.B., B.S., 1952 (Univ. Queensland); Wade, Gytha, M.B., B.S., 1952 (Univ. Queensland); Walsh, Richard Harvey, M.B., B.S., 1952 (Univ. Queensland); Ward, John Lindsay, M.B., B.S., 1952 (Univ. Queensland); Wilson, Douglas George, M.B., B.S., 1952 (Univ. Queensland); Wrench, Dorice Lindsay, M.B., B.S., 1952 (Univ. Queensland); Diamond, Clifford Thomas, M.B., B.S., 1952 (Univ. Queensland); Walker, John Adrian Mozar, M.B., B.S., 1951 (Univ. Adelaide); Gillespie, James Albon, M.B., B.S., 1951 (Univ. Sydney); Evans, Patricia Isobel, M.B., B.S., 1952 (Univ. Sydney); Sanderson (*née* Smith), Jean Tait, M.B., Ch.B., 1946 (Univ. Wales); Dowell, Maurice Francis, M.B., B.S., 1951 (Univ. Melbourne); Snape, Margaret, M.B., B.S., 1944 (Univ. Sydney).

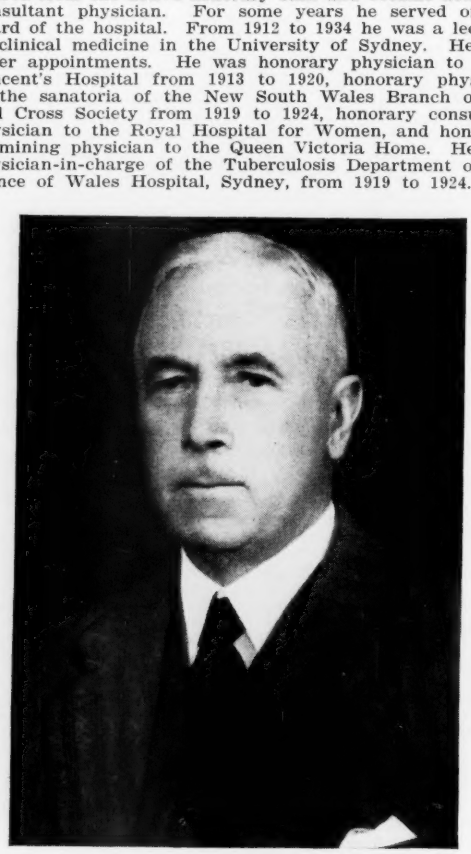
The following additional qualifications have been registered.

Fitzwater, John Joseph, M.R.A.C.P., 1952; Salter, Roger Burnett, M.R.C.O.G. (England), 1947; Neill, Donald George, M.R.C.P. (London), 1952.

Obituary.

EDWARD WILFRED FAIRFAX.

DR. EDWARD WILFRED FAIRFAX, whose death was announced in these pages a month or two ago, practised for many years in Sydney as a consultant physician and was known far and wide for his acts of kindliness and thought for his fellow man. He was a son of the late James Reading Fairfax and a grandson of John Fairfax, one of the founders of *The Sydney Morning Herald*. Fairfax received part of his schooling at Bath College in England and the remainder at Sydney Grammar School under the headmastership of the late Albert Bythesea Weigall. He studied medicine at the University of Sydney and graduated as Bachelor of Medicine in 1899. On graduation, he was appointed as a resident medical officer at Prince Alfred Hospital (it had not then attained the title "Royal"). After serving for one year he went to England where he continued his studies and became a member of the Royal College of Surgeons of England and a licentiate of the Royal College of Physicians of London. On his return from England, he started general practice at Lyons Terrace in Liverpool Street. This old landmark, which was given over almost entirely to doctors and their consulting rooms, has long since disappeared. It was here that he probably had ample opportunity to learn how the poorer people of the community lived. At this time and through his after life he manifested great sympathy with the poor and with those who had been buffeted in life. In 1903 he was elected to the honorary medical staff of Prince Alfred Hospital, and served this institution till the day of his death. In 1934 he retired from the active honorary staff and became honorary consultant physician. For some years he served on the board of the hospital. From 1912 to 1934 he was a lecturer in clinical medicine in the University of Sydney. He held other appointments. He was honorary physician to Saint Vincent's Hospital from 1913 to 1920, honorary physician to the sanatoria of the New South Wales Branch of the Red Cross Society from 1919 to 1924, honorary consulting physician to the Royal Hospital for Women, and honorary examining physician to the Queen Victoria Home. He was physician-in-charge of the Tuberculosis Department of the Prince of Wales Hospital, Sydney, from 1919 to 1924.



By courtesy of *The Sydney Morning Herald.*

On the outbreak of war in 1914, Fairfax offered for service with the Australian Imperial Force and served at the First Australian General Hospital at Rouen, France. He became, for a while, consulting physician to the Fifth Army of the British Expeditionary Force.

During his years of service at the Royal Prince Alfred Hospital he acquired the reputation of being a good clinical teacher. He was quiet and unassuming and never sought the limelight. As a matter of fact he shunned publicity and preferred to do good without advertisement. He was well known in business and philanthropic circles. He was a director of John Fairfax and Sons, Proprietary, Limited, of the Colonial Sugar Refining Company, Limited, and of the Commercial Banking Company of Sydney. He associated himself with such undertakings as Dr. Barnardo's Homes, the Bush Nursing Association and the Boys' Brigade. He held offices in these and did not spare himself in visiting the centres of their activity. It may be said of him that he had a generous mind and that he gave help and encouragement to other people. There was no pretence about him, and as one member of the profession said about someone else, he always fought on the side of the angels.

ROBERT JOSEPH TAYLOR.

DR. R. JEREMY writes: I first knew R. J. Taylor, or Bobbie Taylor as he was usually called, when I worked with him as his clinical assistant in the out-patient department at Saint Vincent's Hospital, Sydney. He was then a brisk and

cheerful physician who did his work quickly and efficiently; he remained a brisk and cheerful physician until his sudden death. When he became an in-patient physician at the hospital he continued to work in the out-patient department in a special clinic. Here he gathered around him a group of patients, mainly of neurological interest. Many of these patients were incurable, but they had a deep appreciation of his attention and friendly encouragement; this was evident in the genuine sadness of these people when he left them. He knew how to help medical students because he knew what they needed to know. He insisted that they learn straightforward clinical signs and disease entities; by his example he taught them kindness and understanding in their approach to patients, particularly the aged. While he was an expert in the detection of rare disease, he kept his students in a balanced perspective, and aided them by uncanny forecasts of the examiner's requirements.

Pretension and display of knowledge were quite foreign to his character. It might be said that he hid his light behind his jocular and unassuming manner, and perhaps by his fond ownership of a battered motor-car.

His contemporaries have told of his service with the first Australian Imperial Force; others of us know that he was proud to have served with them, and a vivid memory is to see him soaked and smiling after a wet Anzac Day march. During the 1939-1945 war he gave much of his time as a visiting physician to the First Australian Out-Patient Department.

This lovable man served Saint Vincent's Hospital and its clinical school for thirty years. We will always remember his cheerful greetings, his happy presence and his modest competence. Others will do his work, but such a strongly individual personality cannot be replaced; he was a shining example of the best of his generation. His kindly influence and some of his wide clinical experience have fortunately been handed on to the many students and young doctors that he taught so faithfully and patiently over the years.

DR. O. A. DIETHELM writes: It was a truly human tombstone which bore the inscription: "I expected this but not yet." The tragically sudden death of Robert Taylor on August 19, 1952, at the comparatively early age of sixty-two years, when at the zenith of his career, bears this out. His decease deprived us of a most beloved colleague and friend, whose loss is generally deplored.

He had a brilliant scholastic, academic, military and professional record. At the time of his death he was a consulting physician to Saint Vincent's Hospital, Sydney, a consulting physician to the Royal Alexandra Hospital for Children, Camperdown, a Fellow of The Royal Australasian College of Physicians, and chief medical officer of the City Mutual Life Assurance Society, Limited, of which he was a member of the board and a director, and was engaged in active practice as a consultant physician. He had been on the honorary medical staff of the Royal Alexandra Hospital for Children for twenty-six years from 1923 to 1949. In addition to his positions on the honorary medical staff of Saint Vincent's Hospital, of which he had been a member of the Advisory Board to the Mother Rectress and the Sisters of Charity. I first met him when I was appointed in 1923 to the honorary medical staff of Saint Vincent's Hospital, as a physician. In that year "Bob" was appointed assistant physician as the senior of the junior honorary medical staff, to be promoted to the senior staff as a full physician in 1936. On my resignation from the honorary medical staff in 1947, he took my place as the senior physician of the hospital, a position which he held until he resigned in December, 1951.

Nobody could have had a more loyal and delightful colleague. Not only was he recognized as a most able physician with a wide and extensive knowledge of medicine, but he was always ready to cooperate and assist, and unselfishly gave of his best on all occasions, no matter how inconvenient it was at the time for him to do so. With it all, his kindness and sympathy for his patients were most striking features of his character, and his ever-genial and happy disposition was always part of himself. For him to live was not merely to breathe; it was to act; it was to make use of our organs, senses and faculties, of all those parts of ourselves which give us the feeling of existence. The man who has lived longest is not necessarily the man who has counted the most years, but he who has done most in his life for his fellow beings. And such a man was "Bob". All who met him, not only his colleagues, carried away an impression of kindly courtesy, deep sincerity, outspoken frankness and honesty of purpose.

His clinical skill and sympathetic understanding earned for him a high reputation amongst his patients and their relatives. His constant thought was for the comfort and

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED DECEMBER 27, 1952.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism	..	..	..	..	..	..	..	..	..
Amœbiasis	..	4(4)	..	1(1)	..	..	..	..	5
Ancylostomiasis	..	..	..	..	..	..	..	..	..
Anthrax	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..
Brucellosis	..	..	..	..	..	..	..	..	..
Cholera	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus)	..	..	..	..	..	..	..	..	..
Dengue	..	..	..	..	..	..	..	..	..
Diarrhœa (Infantile)	3(2)	..	3(2)	..	..	..	1	..	7
Diphtheria	9(3)	2(1)	4	..	4(2)	..	..	..	19
Dysentery (Bacillary)	..	..	1	..	..	..	..	..	1
Encephalitis	1(1)	2(2)	..	..	..	..	..	..	3
Filariasis	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice	..	..	..	..	..	..	..	..	..
Hydatid	..	..	..	..	..	..	..	..	..
Infective Hepatitis	..	8(6)	..	..	7(4)	..	..	..	15
Lead Poisoning	..	..	..	..	..	..	..	..	..
Leprosy	..	..	..	..	..	..	..	..	..
Leptospirosis	..	..	..	..	..	..	..	..	..
Malaria	..	..	..	..	..	..	..	..	..
Meningococcal Infection	..	2(2)	..	..	2(2)	..	..	..	4
Ophthalmia	..	..	..	..	1	..	..	..	1
Ornithosis	..	..	..	..	..	..	..	..	..
Paratyphoid	..	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	23(18)	11(2)	3	19(13)	..	11(6)	..	..	67
Puerperal Fever	..	..	..	..	..	..	..	..	..
Rubella	..	25(25)	1(1)	..	..	..	..	1	27
Salmonella Infection	..	..	..	..	..	..	..	..	..
Scarlet Fever	9(5)	18(15)	9(8)	3(3)	..	1	..	..	40
Smallpox	..	..	..	..	..	..	..	..	..
Tetanus	..	..	1	..	..	..	..	..	1
Trachoma	..	..	..	..	..	..	..	..	..
Trichinosis	..	..	..	..	..	..	..	..	..
Tuberculosis	19(17)	17(9)	26(21)	5(3)	5(5)	1	..	..	73
Typhoid Fever	..	..	..	..	..	..	..	..	..
Typhus (Flea-, Mite- and Tick-borne)	..	..	..	1(1)	..	..	..	..	1
Typhus (Louse-borne)	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] Figures in parentheses are those for the metropolitan area.

well-being of his patients. He was a great worker and set an inspiring example to all who served with him. The Sisters of Charity and the medical and nursing staff of Saint Vincent's Hospital, Sydney, all gave him a loyal service which was mingled with admiration and affection. He was always modest and never sought publicity. Devotion to duty and loyalty to his profession were the foundations on which he built his success, and the love and affection which he gained from his colleagues and friends. His own reward was in the close and lasting friendships which he made with people of all descriptions whom he met in the course of his life and his professional work. Always of a very cheerful nature and an excellent raconteur, one of his greatest pleasures was to spend an evening with his friends. His breezy and approachable manner endeared him to many, and he never lost that boyish vigor which evidently characterized him from his earliest days. In his home he was a perfect host, full of witty and stimulating conversation, and a sympathetic listener. He will be sadly missed by us all and certainly in the wards of Saint Vincent's Hospital, Sydney, where he was so greatly respected and loved.

Deaths.

THE following deaths have been announced:

SLEEMAN.—James Henry Sleeman, on December 27, 1952, at Portland, Victoria.

PURSER.—Cecil Purser, on January 13, 1953, at Wahroonga, New South Wales.

YEATES.—Walter Francis Stewart Yeates, on January 20, 1953, at Ballina, New South Wales.

Medical Appointments.

Dr. C. Lomas has been issued with a licence authorizing him to sign permissions and certificates for cremation, and to grant permission to cremate any human body after death, by the Department of Health and Home Affairs, Brisbane.

Dr. R. G. Gold has been appointed registrar to the Northfield Wards, Royal Adelaide Hospital.

Dr. D. D. Beard has been appointed out-patients' registrar at the Royal Adelaide Hospital.

Dr. J. P. Maddern has been appointed resuscitation registrar at the Royal Adelaide Hospital.

Dr. R. C. Angove has been appointed assistant physician in the Tuberculosis Services of South Australia.

Dr. Lorraine Cecile Lawrence has been appointed to the Department of Public Health of New South Wales.

Dr. Leslie Marden has been appointed Quarantine Officer at Queenscliff under the provisions of the *Quarantine Act*, 1908-1950.

Nominations and Elections.

THE undermentioned[1] have applied for election as members of the South Australian Branch of the British Medical Association:

Allen, Thomas Howard, 22 South Esplanade, Glenelg, South Australia.

Harwood, John William, 9 Carter Street, Thorngate, South Australia.

Connor, Brian Anthony, 4 Anglo Avenue, Parkside, South Australia.

Jorgenson, Donald Murray, 25 Cambridge Terrace, Unley, South Australia.

Stockbridge, John Keith, 7 Raymond Walk, Toorak Gardens, South Australia.

Paull, Colin Gordon, 10 Milton Avenue, Fullarton Estate, South Australia.

Evans, Kenneth Alan Greig, 121 Wattle Street, Fullarton, South Australia.

Last, Peter Murray, 7 Olive Street, Glenelg, South Australia.

Gard, Jeanette Thrush Brentnall, 603 Esplanade, Grange, South Australia.

Mill, James Crowe Davidson, 102 Parade, Norwood, South Australia.

Flower, Clifford James McKinnon, 30 Gurney Road, Dulwich, South Australia.

[1] These applicants qualified in December, 1952, at the examinations for the degree of M.B., B.S. (Univ. Adelaide), but the degrees had not been conferred at the time when their applications for membership were considered by the Branch Council.

The undermentioned have been elected as members of the South Australian Branch of the British Medical Association: McCartney, James Elvins, M.B., Ch.B., M.D., D.Sc. (Edinburgh), 1915; Quinn-Young, Michael, M.B., B.S., 1952 (Univ. Adelaide) (qualified 1951); Pryor, William John, M.B., B.S., 1952 (Univ. Adelaide); Dunn, John Edgar, M.B., B.S., 1952 (Univ. Adelaide); Waterhouse, Ronald Greaves, M.B., B.S., 1952 (Univ. Adelaide).

The undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

Kirkland, Thomas Hamilton Speirs, M.B., B.S., 1951 (Univ. Sydney), No. 3, Camberly, Edgecliff Square, Edgecliff, New South Wales.

Diary for the Month.

FEB. 3.—New South Wales Branch, B.M.A.: Organization and Science Committee.
FEB. 4.—Western Australian Branch, B.M.A.: Council Meeting.
FEB. 5.—South Australian Branch, B.M.A.: Council Meeting.
FEB. 6.—Queensland Branch, B.M.A.: General Meeting.
FEB. 10.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
FEB. 13.—Queensland Branch, B.M.A.: Council Meeting.
FEB. 14.—Tasmanian Branch, B.M.A.: Annual Meeting.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federal Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225 Wickham Terrace, Brisbane, B17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178 North Terrace, Adelaide): All Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205 Saint George's Terrace, Perth): Norseman Hospital: all Contract Practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

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